Safety Maintenance and Production

EST. 1901 AMERICA'S PIONEER MAGAZINE IN ITS FIELD

FIFTY CENTS OCTOBER, 1952

Now . . . 2 New

AO COVERGLAS GOGGLES

Fit Over Safety
And Personal Glasses

NEW
Safety
Goggles

#326

#327

NEW – 4 WAYS!

1. New Cup Size and Shape
2. New Lens Size and Shape
3. New Side Shields
4. New Easy Lens Replacement

AO's newest development in eye protection—Chippers' and Welders' Coverglas Goggles—can be worn over practically every pair of personal glasses (even the biggest frames) and most types of safety prescription goggles *with and without side shield.*

Wider vision, too, because the lenses are larger and scientifically designed to give up to 20% more vision. Yet, with all these features the goggles weigh but a fraction of an ounce more than ordinary Coverglas goggles . . . cost only slightly more.

These goggles are the newest . . . and two of the greatest . . . developments since the advent of safety goggles. Get all the facts about these two outstanding Coverglas goggles from your AO Safety Products Representative. He can supply you.

QUICK FACTS

- Lens easily replaceable from rear (not front) by means of a spring clamp—no tools needed
- Lightweight, brown plastic cups fit face snugly, won't conduct heat or electricity
- Light-tight side shields for welders (on No. 327 goggle) provide indirect ventilation
- Bridge—High-grade leather. Instant adjustment
- AO worker-lab tests show much greater field of vision and increased comfort
- All-rubber headband, easily adjustable

"326" Chippers' Coverglas goggle supplied with regular Super Armorplate lenses. "327" Welders' Coverglas goggle supplied with regular Noviweld lenses and cover lenses.

AO's Industrial Vision Program Increases Production, Decreases Accidents. Write today for booklet "Improved Industrial Vision" to 1012 Vision Park, Southbridge, Mass.

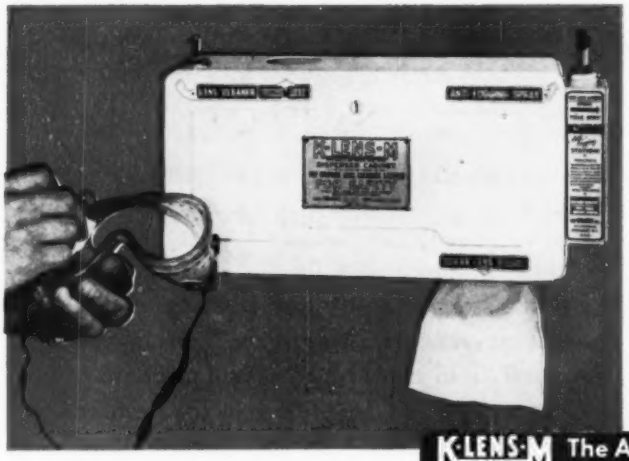
American Optical
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

(For further details, use Key # K-1 on free Inquiry Card on page 117)

WHY PAY FOR FOG?

Every time your workers stop to clear fog from their safety eye wear;
Every time safety goggles are perched uselessly on caps;
Every time a lens is scratched in cleaning;
—It costs you money.



You can eliminate this cost with K-LENS-M Liquid Method of lens cleaning. Fog that interferes with vision can steal production time all along the line wherever there is humidity, body heat or temperature extremes. K-LENS-M Lens Cleaner and K-LENS-M Anti-Fogging Liquid have proved for more than a decade to be the most effective and most economical way to combat this loss.

K-LENS-M The Acknowledged Leader in the Lens Cleaning Field

Easy to Install; Easy to Service; Easy to Use

The K-LENS-M Lens Cleaning and Anti-Fogging Station is a compact unit for efficient use by your workers. The cabinet contains the K-LENS-M Lens Cleaner; K-LENS-M lint-free Lens Tissues, with disposable space; and the K-LENS-M Anti-Fogging Liquid attachment. Endorsed by Safety Engineers. Used regularly by leading manufacturing plants, packing houses, canneries, public utilities, government installations, foundries and business offices throughout the world.

NEW Pocket-Size K-LENS-M "TwinKit"

This pocket-size, plastic "TwinKit" with K-LENS-M Lens Cleaner and K-LENS-M Anti-Fogging Liquid is ideal for off premise workers.

- o Cleans glass **and plastic**
- o Cleans quickly, easily; no film, no scratching
- o Most effective anti-fogging liquid—it really does a job; keeps glasses fog-free for entire work day.
- o The only complete lens cleaning and anti-fogging unit in one compact station.
- o Most economical—Lowest cost per cleaning
  —Saves on replacement lens

It takes Foresight to Save Eyesight.

K-LENS-M . . . Complete Lens Cleaning and Anti-Fogging Equipment

K-LENS-M
REG U.S. PAT. OFF.

Manufacturers of K-LENS-M

Liquid Lens Cleaner
Lint-free Lens Tissues
Anti-Fogging Liquid
Dispenser Cabinets
Anti-Fogging Station

THE WILKINS CO., INC.
CORTLAND 2, N. Y.

For demonstration, visit Booth 58, National Safety Congress, October 19–23, Chicago

(For further details, use Key # K-2 on free Inquiry Card on page 117)

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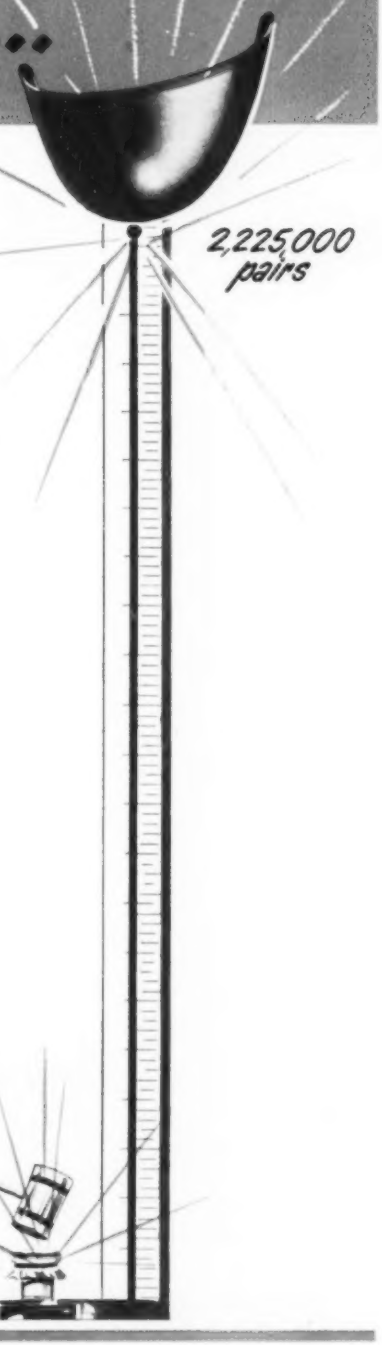
A Steel Toe for every

Safety Box Toe Company truly makes a steel toe for *every* safety purpose . . . safety steel toes for work, semi-work, dress, semi-dress, women's and rubber footwear . . . all in a range of styles, sizes and widths. From two busy fabricating plants, both fully equipped with every needed skill and technical facility, flow millions of steel toes to meet the ever-increasing demand for toe protection in this country and foreign markets.

The inside story of safety toes has been one of constant progress, from the original Munson type hammered out in an old New England blacksmith shop to the present day styling in toe profiles. Not only have profiles changed but safety features as well. Modern steel toes are *precision* built and tomorrow's trends are anticipated in today's engineering.

SAFETY BOX TOE COMPANY

Safety Purpose...



WINGUARDS *popularity* HAS NOW PASSED THE 2¼ MILLION PAIR MARK

53 progressive safety shoe manufacturers throughout the United States and Canada now *specify* WINGUARDS for their dress and work type footwear.

See us at Booth 231
41st National Safety
Congress Exposition
October 19-23
Conrad Hilton Hotel
Chicago

812 STATLER BUILDING • BOSTON

SELLING AGENTS: BECKWITH MANUFACTURING COMPANY, DOVER, N. H.

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(For further details, use Key # K-3 on free Inquiry Card on page 117)

30% lighter

the NEW SAF-I SPECTACLE

NEW EXCLUSIVE FEATURES

- 30% Less Weight
- Dual-Purpose Frames
- Snap-On Side Shields
- Optilite "A" Plastic Lens

The combined weight of the NEW Plastic Frame and Optilite A plastic lens is 30% less than hardened glass spectacles. Strong, sturdy and rugged. The Optilite A Saf-I-Lens has super surface hardness and greatly increased scratch resistance which insures long life and economy. Meets all Federal Specifications for optical qualities and impact resistance. (Also available with low cost Optilite B Plastic Lenses or Hardened Glass Lenses.)

Two Lens Sizes—44 MM with 20, 22 and 24 bridge widths or 47 MM with 22, 24 and 26 bridge widths. Molded Acetate cable riding bow or acetate spatula temples.

SNAP-ON PLASTIC SIDE SHIELDS A NEW EXCLUSIVE FEATURE

Side Shields can be instantly attached or detached. Special design allows side shields to be positively locked to frame without the use of tools. All Dual-Purpose frames are designed to take side shields if desired. SAVE with the Dual-Purpose frame. Buy extra side shields only when side shield protection is needed and attach to Dual-Purpose frames.

Write for Literature and Prices

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In Canada PARMELEE, LTD. Toronto — Montreal

U.S. SAFETY SERVICE CO. — SAFETY EQUIPMENT & ENGINEERING

(For further details, use Key # K-4 on free Inquiry Card on page 117)

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FORMERLY "SAFETY ENGINEERING"

EST. 1901

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Our Thanks for the Courtesy
Cover: Walter Kidde & Co.

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

for authoritative answers to safety...ask the manufacturer hard ones!

THIS ONE'S A DILLY—an all-felt, plastic-bottomed "Parka" boot developed to prevent frostbite common in mines and lumber camps. 7-layer toe construction includes aluminum foil liner that reflects body heat and acts as vapor-barrier. To be worn with rubbers, or 4-buckle arctic in deep snow.

Perhaps we can help you. See us at

MUCKER—a brand new type of steel-toe safety work boot developed by Lehigh for engineers, oil field workmen and all others who get into muck and sludge. Levis or regular pants can be tucked inside or worn outside. Loose fitting top is cooler, easier than laced-up boots.

HIGH WIRE ARTIST—specially designed for linemen. Built up heel hooks the pole step—steel plate and extra leather wedge under the arch keep feet from going to sleep on narrow rungs. Note extra flap at instep to resist scraping against pole; ease pressure of climbing spikes.

the easy problems in foot who has solved most of the

BOOTH 87

NATIONAL SAFETY CONGRESS

LEHIGH

SAFETY SHOE COMPANY

ALLENTOWN, PA.

SPORT SHOE? Try and tell this one from any ordinary crepe-soled oxford! But the sole is Neoprene crepe that resists oil, grease, heat and abrasion, and inside is steel toe that withstands impacts up to a ton. Your men will like this smart way to save on two-in-one shoes for dress and work.

BRILLIANT YELLOW TOE CAP identifies this shoe in atomic energy plants so it can't be worn outside dangerous radiation areas. A simple change to adapt one of Lehigh's most popular work shoes to a highly specialized industrial hazard. What's yours?

TOO WET FOR SHOES—TOO HOT FOR BOOTS? Creameries, dairies, packing plants needed an in-between safety shoe for wet-floor departments. So Lehigh came up with this light-weight, ankle-hugging boot that keeps feet dry and safe—helps to prevent bone-breaking skids and falls.

(For further details, use Key # K-5 on free Inquiry Card on page 117)

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★ NATIONAL SAFETY CONGRESS & EXPOSITION

ON MORE than one occasion this publication has criticized the growing tendency to "flood the market" with so-called safety conventions held all over the map and often simultaneously. In far too many cases, such meetings have degenerated into a racket to pull some indigent organization out of a financial hole. They have embarrassed their business sponsors, wasted the time of delegates and speakers and certainly have burdened safety product manufacturers with unnecessary costs for exhibit space of very doubtful value.

Safety men and equipment manufacturers are no different than those in any other industry. We all enjoy a junket now and then and relish a reasonable excuse to get away from the normal grind. A safety show need not be deadly nor must it take on the atmosphere of a prolonged wake to be really effective. But it is too serious in character to be kicked around as merely another excuse for elbow-bending at another's expense.

Happily for all concerned, there are exceptional safety shows which accomplish all the objectives visualized by their progressive sponsors. High on this limited list is the National Safety Congress and Exposition held each year. For more than four decades this annual Congress has represented careful planning to focus the national spotlight on safety experts, leaders in the crusade to conserve life and those equipment manufacturers who are dedicated to saving our human and material resources.

Internationally known speakers who have something worthwhile to give to the world will head up hundreds of subject sessions at the convention. In fact, long before the various subject meetings outgrew the confines of a single hotel in the nation's Second City. Now, while exhibits are attracting throngs at Chicago's largest hotel, meetings will be held close by at the Hotel Congress and other leading hotels in that city. Leaders in their respective fields of accident prevention, sanitation, hygiene, fire control, home and farm safety, highway and transportation safety all will find ample material to take back with them to their own communities. In addition, hundreds of booths will display products, equipment and services designed to eliminate or greatly minimize our growing toll of accidental injury.

On Monday, October 19th when the convention opens in the City of Chicago, safety leaders from all the western hemisphere and the free countries of Europe will converge on Chicago to give to one another access to the latest findings in accident prevention. Here is another classic example of safety cooperation at work for the betterment of mankind in general.

The National Safety Congress reflects the Western or free way of life and once again proves that safety is a cooperative venture rather than a competitive race for supremacy. H.A.

DANGER!

SO FAR...AND YET

SO NEAR!

No less vulnerable to eye accidents than the shop worker himself, is the occasional visitor to hazardous zones away from his own desk or drawing board. In fact, his very lack of familiarity with such surroundings may create the most dangerous situation that occurs in your shop. He needs eye protection, too.

Acetate Model Y-70

Ideal for just such personnel, as well as workers in semi-hazardous zones, is this non-sparking Bausch & Lomb frame fitted with impact-resistant lenses. It is also suited to workers whose skin is sensitive to metal frames. Ful-Vue temples for unobstructed side vision, 5 bridge widths, 3 lens sizes. Ideal for safety lenses ground to worker's prescription. For complete data, write: Bausch & Lomb Optical Company, 90522 Smith St., Rochester, N. Y.

You can benefit from these Bausch & Lomb industrial vision services

1. **Complete Line of Protective Eyewear**—Completely dependable safety eyewear engineered to meet the most rigid tests for every job in your plant. Protection from all types of eye hazards.

2. **Corrective-Protective Service**—Fast, dependable laboratory service in every major industrial area for professionally-prescribed corrective safety lenses for worker comfort and efficiency.

3. **Plant Surveys on Eye Protection**—Bausch & Lomb offers services of experienced safety experts to investigate problems of eye-hazardous operations in your plant and make recommendations for their solution.

4. **Employee Education Programs**—Posters for bulletin boards, pay envelope inserts, other material designed to stimulate interest among workers for eye safety measures; an adjunct to your safety program.

5. **Occupational Vision Service**—A quick, dependable method for relating visual performance of each employee to his job. The Bausch & Lomb Ortho-Rater is especially valuable for identifying accident-prone workers.

6. **Leadership in Optical Science**—For 100 years Bausch & Lomb has been a leader in research and development of products to serve better the optical and visual needs of mankind. All industry is profiting today from this knowledge and experience.

1853/1953 INTO A NEW CENTURY OF OPTICAL PROGRESS

BAUSCH & LOMB CENTENNIAL

BAUSCH & LOMB *Safety Eyewear*

(For further details, use Key # K-6 on free Inquiry Card on page 117)

NEW

ANSUL WHEELED FIRE EXTINGUISHERS *provide*

MODEL 150-B

Rubber tires optional equipment

. . . GREATER FIRE-KILLING CAPACITY . . . HIGH-SPEED OPERATION and EASIER MANEUVERABILITY . . .

MODEL 350-B

Ansul "B" Model Wheeled Extinguishers are completely new. Dozens of design changes have improved their operating characteristics as well as their appearance. They provide faster, easier extinguishment of fires almost twice as large as those handled by our "A" model wheeled extinguishers. New Ansul Wheeled Extinguishers are easier to move to the fire. They can be actuated faster. They'll put out more fire faster. They're easier to recharge and maintain. And they will give even more years of trouble-free service.

For a demonstration call your Ansul representative today. Or for additional information send for file number *W-50*.

ANSUL *Chemical Company*

FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN

MANUFACTURERS OF DRY CHEMICAL FIRE EXTINGUISHING EQUIPMENT, REFRIGERATION PRODUCTS, INDUSTRIAL AND FINE CHEMICALS AND LIQUEFIED GASES

NEW

ANSUL WHEELED FIRE EXTINGUISHERS *provide*

1. Easier, Faster Operation
2. Greater Fire-killing Power
3. Easier Maneuverability
4. Greater Dependability
5. Easier Maintenance
6. Greater Safety for the Operator
7. Better Appearance

ANSUL Chemical Company

FIRE EQUIPMENT DIVISION • MARINETTE, WISCONSIN

OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES

New Designs and New Equipment to be Featured at Safety Show

The 41st NATIONAL SAFETY CONGRESS and EXPOSITION is scheduled for Chicago during the week of October 19 to 23. Exhibits, confined to the Conrad Hilton Hotel, will be a must for all delegates. Each year manufacturers of fire protection and safety equipment point for the week of the Safety Show to introduce new models and new safety devices. These exhibits provide an excellent opportunity for safety personnel to investigate the latest developments by manufacturers of safety equipment.

New Wheeled Extinguishers

Featured in Ansul Chemical Company's exhibit will be the new "B" Model Ansul Wheeled Extinguishers. Fire-fighting effectiveness of the Models 150-B and 350-B is nearly double that of the "A" Models which till now have been considered tops in fire extinguishing capacity. In Ansul's new wheeled units operation has been simplified, maintenance is easier and certain safety features have been incorporated into these new models. The appearance has been improved as a result of styling by Raymond Loewy. And the new baked enamel finish assures greater durability of their sparkling appearance.

Preview of New 10-Pound Model

Although the Ansul 10 Extinguisher will not be in production until after the first of the year, delegates to the Safety Show will get a sneak preview of this new Ansul development. It, too, is styled by Raymond Loewy and combines an attractive appearance with the functional superiority associated with all Ansul Fire Extinguishing Equipment.

Demonstration of Nozzle Assembly

Of considerable interest to all fire protection personnel will be a demonstration of the quality control practiced in the assembly of an Ansul water-tight nozzle and in its subsequent pressure test. In a corner of the Ansul booth (Nos. 92-93) a special work table will be installed. Production supervisors from the Ansul plant will go through the operations of assembling a nozzle from previously inspected parts. After each nozzle has been assembled it will be subjected to a 200 lb. gas pressure test as is done at the factory.

Another feature of interest to delegates will be a series of photographs showing the various steps taken in the manufacture, filling and inspection of gas cartridges for Ansul Hand Extinguishers. Emphasis is placed on Ansul's rigid quality control in the manufacture and filling of this all-important part of a dry chemical hand extinguisher.

The display will also include actual models or photographs depicting Ansul's complete line of Dry Chemical and Met-L-X Dry Powder Fire Extinguishing Equipment.

(Advertisement)

(For further details, use Key # K-7 on free Inquiry Card on page 117)

YOU GET COMFORT PLUS *BETTER EYE PROTECTION*

WATCHEMOKET eye SAVERS

Shatterproof

METHACRYLATE LENSES ARE SAFER

Eye-Savers exclusive methacrylate lenses never shatter or splinter with impact, do not pit from sparks. Clear and colored lenses absorb 96 to 100% of all harmful ultraviolet rays. Green lenses absorb sufficient infra-red for complete protection from a weld arc three feet away.

MODEL 440 with Methacrylate Lens FOR HEAVY IMPACT

SOFT VINYL FRAME — FITS OVER LARGEST PRESCRIPTION GLASSES

Extra-soft plastic frame with soft nose flange form-fits snugly, yet comfortably, around facial contour . . . closes the gaps around nose and cheeks.

EXTRA WIDE REPLACEABLE LENS

The optically perfect, shatterproof methacrylate lens provides full protection against the heaviest impact. Lens is extra wide for picture-window vision. Improved metal lock bar holds lens tightly in frame. Frame acts as bumper to prevent scratching lens when laid face down.

VENTILATION AND COLOR STYLES

Available with *standard ventilation* shown in Model 440 (above) or *screen ventilation* shown in Model 441 (left) or *no ventilation.* Lens colors: Clear or light, medium and dark green.

MODEL 441 with Acetate Lens FOR LIGHT IMPACT

Contains all the features of Model 440 except the lens is laminated acetate – optically perfect – light and comfortable to wear.

CHEEPEE

This low-cost, one piece acetate goggle provides safe, light-weight, comfortable eye protection. Exceeds federal specifications. Available in clear or medium green.

METHASPEC Model 55

Here is a low cost, shatterproof methacrylate eye shield, ideal for a visitor's goggle. Easy lens angling and Retrax temple adjustments assure perfect fit. Available in clear or light or medium green.

Quality Eye Protective Equipment ***Made by the Leaders in Plastics***

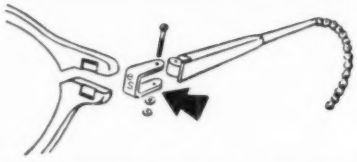
WATCHEMOKET OPTICAL CO., INC.

In Canada: Levitt-Safety Limited, Toronto 10, Montreal 1

225 West Exchange St.
PROVIDENCE 3, R. I.

QUALITY AT LOWER COST
WITH THE EYE SAVERS LINE!

SPLIT-JOINT Model 80
for Plano or Prescription



SPLIT JOINT SPREADS APART FOR EASY LENS REPLACEMENT

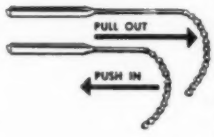
No need for special heaters. A simple operation, and lenses are quickly removed and easily inserted. All parts are standard and replaceable at low cost.

DOUBLE NOSE-BRIDGE DESIGN GIVES EXTRA STRENGTH

Bridge fits comfortably ON the nose at the geometric center between the eyes. No adjustment is needed. One size eliminates extra stock.

TWO FRAME SIZES AVAILABLE to hold 45 x 48 mm and 42 x 44 mm standard safety lenses. **RETRAX TEMPLES** shown below are standard.

EYE SAVERS "RETRAX" TEMPLES are easily adjusted to fit any head.



All Eye-Savers Spectacles are available equipped with new, light weight plastic Retrax temples that telescope in or out for perfect fitting. Plastic "ball-chain" hook design fits comfortably over the cartilage in back of ears and is self ventilating.

TUC-AWAY Model 415
for Lightweight Comfort

90% PROTECTION THAT'S WORN 100% OF THE TIME

Tuc-Away featherlight design is easy to wear . . . comfortable and attractive. Shatterproof, optically perfect, methacrylate lenses provide safe protection. Universal nose-bridge fits every face.

THREE LENS STYLES EASILY REPLACED: Snap-out, Snap-in

All methacrylate lenses absorb 96 to 100% of harmful ultra-violet rays. Available in clear or infra red absorbing light, medium or dark green.

Available in lens styles shown below.

SEMI-CUP LENS for side and bottom protection

FULL 1" SIDE SHIELD for complete side protection

REGULAR SIDE SHIELD for minimum side protection

RETRAX TEMPLES are standard on the Tuc-Away. Model 415 (Plastic Retrax) Model 412 (Metal Retrax). Also available with club temple Model 410.

Obtain complete details from your nearest authorized EYE SAVERS Jobber or write direct. New catalogs and prices are now available.

Quality Eye Protective Equipment ***Made by the Leaders in Plastics***

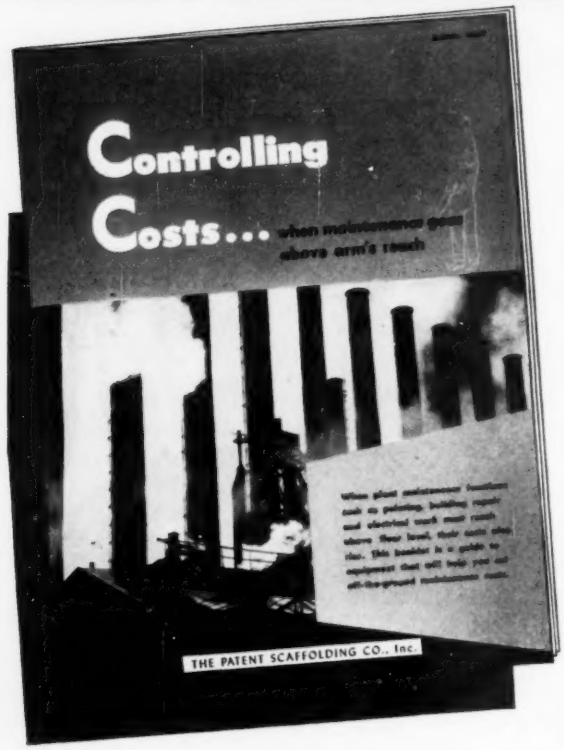
WATCHEMOKET OPTICAL CO., INC.

225 West Exchange St.
PROVIDENCE 3, R. I.

In Canada: Levitt-Safety Limited, Toronto 10, Montreal 1

(For further details, use Key # K-8 on free Inquiry Card on page 117)

Free Booklet



how to save money in maintenance . . .

Send for this complete guide to the right scaffolds and ladders for cleaning, painting, electrical work, plant and equipment maintenance, etc. It lists types of jobs and tells you which equipment is best for each. It's packed with pictures and ideas on how to cut your off-the-ground maintenance costs and increase safety. Years of scaffolding know-how condensed for you . . . and it's yours without cost.

Patent Scaffolding—gives you the right scaffold or ladder for every job . . . and everything from one source! Branches In All Principal Cities.

GOLD MEDAL LADDERS SCAFFOLDING

for Greater Safety . . . Efficiency . . . Economy

THE PATENT SCAFFOLDING CO., Inc.

38–21 12th St., Dept. SM&P, Long Island City 1, N.Y.
West Coast Plant: 6931 Stanford Avenue, Los Angeles, Cal.

Please send me my free copy of Bulletin G-205.

Name _____

Position _____

Company _____

Address _____

City _____ **Zone** ____ **State** _____

(For further details, use Key # K-9 on free Inquiry Card on page 117)

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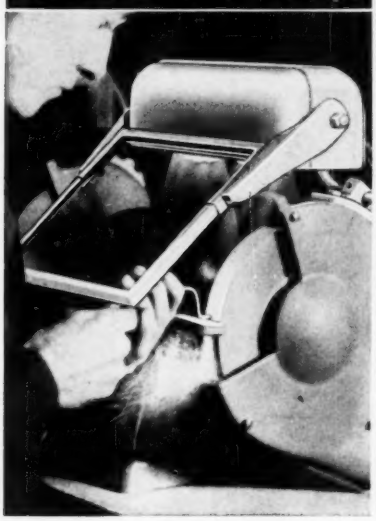
(For further details, use Key # K-10 on free Inquiry Card on page 117)

JUNKIN
ELECTRO-LOCK SHIELD



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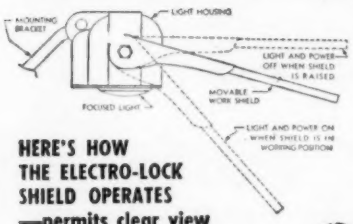
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LIGHT HOUSING
LIGHT AND POWER OFF WHEN SHIELD IS RAISED
FOCUSED LIGHT
MOVABLE WORK SHIELD
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HERE'S HOW THE ELECTRO-LOCK SHIELD OPERATES
—permits clear view of work, still providing maximum protection

JUNKIN
ENGINEERED SAFETY
SAFETY APPLIANCE CO.
101 S. FLOYD ST.
LOUISVILLE 2, KENTUCKY

(Use Key # K-11 on Inquiry Card on page 117)

THE Future SHOWS

Chicago, Ill. *Oct. 19–23*

Forty-first National Safety Congress and Exposition. (Conrad Hilton, Congress & other hotels.) R. L. Forney, general secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Boston, Mass. *Oct. 20–22*

Industrial Packaging and Materials Handling Exposition (Boston Mechanics Building).

Cincinnati, Ohio *Nov. 17–18*

Third annual Greater Cincinnati Safety Conference. (Sheraton-Gibson Hotel.) Kenneth R. Miller, executive director, Greater Cincinnati Safety Council, 1203 Federal Reserve Bank Bldg., Cincinnati 2, Ohio.

Fort Worth, Texas *Nov. 19*

Ninth Annual Fort Worth Industrial Safety Conference (Hotel Texas). L. W. Graff, safety director, Ft. Worth Safety Council, Majestic Bldg., Ft. Worth, Texas.

New Orleans, La. *Dec. 7–8*

Louisiana Safety Conference (Roosevelt Hotel). Charles E. Doerler, conference secretary, Caddo Bossier Safety Council, Inc., 610 Edwards St., Box 806, Shreveport, La.

Chicago, Ill. *Jan. 25–28*

Plant Maintenance & Engineering Show (International Amphitheater). Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

Dayton, Ohio *Feb. 10*

Second Annual Miami Valley Safety Conference (Biltmore Hotel). Marvin Purk, Dayton Chamber of Commerce, Biltmore Hotel, Dayton 2, Ohio.

Philadelphia, Pa. *March 10–11*

Twentieth Annual Philadelphia Regional Safety and Fire Conference and Exhibit (Bellevue-Stratford Hotel). Walter W. Matthews, Managing Director, Philadelphia Chamber of Commerce Safety Council, Architects Building, 17th and Samson Streets, Philadelphia 3, Pa.

Indianapolis, Ind. *March 17–18*

Seventh Annual Central Indiana Safety Conference and Exhibit (Claypool Hotel). Indianapolis Safety Council, 320 North Meridian St., Indianapolis, 11, Ind.

Pittsburgh, Pa. *March 30–31*

Twenty-ninth Annual Western Pennsylvania Safety Conference and Exhibition (Hotel William Penn). Harry H. Brainerd, Executive Manager, Western Pennsylvania Safety Council, 605 Park Bldg., Pittsburgh 22, Pa.

New York, N. Y. *April 6–9*

Twenty-fourth Greater New York Safety Convention and Exposition (Hotel Statler). George E. Decker, Lincoln Building, 60 East 42nd St., New York 17, N. Y.

Detroit, Mich. *April 26–28*

Michigan State Safety Conference (Sheraton Cadillac Hotel). Jerry Moore, executive secretary, Corporate Service, Inc., Detroit, Michigan.

Raleigh, North Carolina *May 4–6*

Twenty-fourth Annual North Carolina Statewide Industrial Safety Conference (Sir Walter Hotel). H. S. Baucom, Safety Director, North Carolina Industrial Commission, Raleigh, North Carolina.

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U.S.B. of M. approved for type A and lead dusts. 46 sq. in. twin filters.

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SOUTH BEND, INDIANA

(For further details, use Key # K-12 on free Inquiry Card on page 117)

IS YOUR FLOOR SADDLED with an ACCIDENT DEBIT?

Here's what slipping Accidents do to the cost of your insurance

Workmen's compensation rates are based on the EXPECTED loss by all companies participating in your type of industrial operation—ADJUSTED to reflect the efficiency of your plant safety program. Say your rate for your industrial group is $1 per $100 of payroll—if your accident losses have been 23% higher than average, your policy rate becomes $1.23. If, on the other hand, your losses drop, your rate will be lowered to 85c. Whether your floors rate a "credit" or are charged with a "debit" depends on safe floor treatment.

NON-SLIP HILLYARD TREATMENTS *DECREASE* ACCIDENT FREQUENCY

Hillyard products for industrial floors such as Super Shine-All, Super Hil-Brite, Onex-Seal, Hil-Tex, Hilco-Lustre are specifically researched to pass tests of the nation's insurance companies far in excess of minimum requirements . . . provide SAFER floors under expected hazards of all plant operations in stockrooms, storage and work areas, runways, loading docks, offices, rest rooms. And, instead of involving additional labor—actually save you up to 50% in labor time.

SEE KURL-OFF, THE SAFE, FAST, NON-INFLAMMABLE PAINT AND VARNISH REMOVER DEMONSTRATED

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Hillyard Booth #22
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October 19th-23rd!

Hillyard Industrial products for Safe Floors test "Slip-Resistant"

Return Cost Credits to YOU

Because Hillyard treatments cut down on slipping frequency, your losses drop, your insurance rates are lessened. Find out how to safe-treat your floors.

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Please send your floor expert to make a complete survey of my plant—advise me on how to safe-treat my floors against accidents.

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Institution.....
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City.....State.....

FLOOR HILLYARD TREATMENTS

"You know it's right when it comes in the checkerboard drum."

St. Joseph, Mo.

(For further details, use Key # K-13 on free Inquiry Card on page 117)

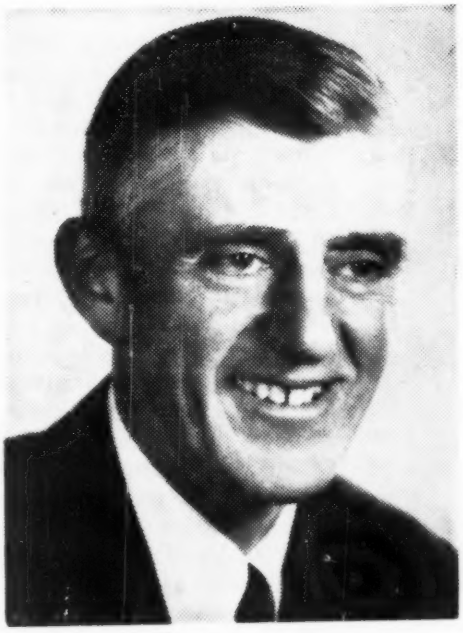
SAFETY MAINTENANCE & PRODUCTION

VOL. 106, No. 4 • OCTOBER, 1953

An important accident prevention technique used by private industry is the use of safety signs and tags to warn people of hazardous working conditions found around the plant.

LAXITY OF ACCIDENT PREVENTION IN GOVERNMENT

U. S. Senator aroused by poor safety record among Federal employees



Senator Saltonstall

UNITED STATES Senator Leverett Saltonstall (Massachusetts) broadened his campaign for improvement of the safety record of the Federal Government to include, in addition to reducing accidents among Federal employees, two other areas of preventable loss to the Government—fire damage to Government property and losses on account of negligent injuries by Government employees to the persons and property of others. As preliminary steps, Senator Saltonstall has written to Attorney General Herbert Brownell, Jr., and to W. E. Reynolds, Commissioner of Public Buildings Service, requesting their comments on these proposals.

"Preventable losses to the Government are shockingly high," Senator Saltonstall charged, "and I intend to do something about them."

The Senator stated that a careful study of accident experience data based on official Labor Department, Bureau of Employees' Compensation reports, prepared for the attention of the Administration, had convinced him that the Federal government is lagging seriously in the important field of Federal employees' safety.

(Continued on next page)

The Labor Department records show that 396,631 civilian Federal employees were injured during the years 1947 to 1951. Fatal accidents took the lives of 1,304 Federal workers. Man-days lost totaled 14,712,953 or 117,703,624 man-hours lost.

According to a study prepared for the Administration at Senator Saltonstall's suggestion by John F. O'Malley, Supervising Safety Engineer for the General Services Administration, with the advice of Ned H. Dearborn, President of the National Safety Council, Joseph Doyer, Head of the United States Police Union, and other representatives of Federal employee groups, the direct and indirect accident cost to the Federal government during the 5-year period amounted to more than $447 million.

Production time lost as the direct result of disabling injuries was the equivalent of the loss of 63,970 workers who continued to receive compensation without rendering service to the government or to the taxpayer. In man-hours lost, the monetary waste totaled more than $181 million at the average government hourly rate of $1.54.

"The loss of life to 1,304 Federal workers is both a challenge and an opportunity," said Senator Saltonstall. "It is a challenge to reduce this terrible toll and an opportunity to use these figures to justify intensified efforts to prevent accidents. This loss of life cannot be shrugged off as unavoidable. It must be stopped. We must not subject our government workers and their families to needless suffering and insecurity. We must not deprive our country of productive work so necessary if we are to meet our domestic and foreign obligations."

Waste Spearheads Safety

Senator Saltonstall pointed out that in private industry the economic waste resulting from accidents is the driving force behind the organized safety movement. Accidents cripple and disable valuable men. They damage or ruin machinery and equipment. They interfere with production. For these reasons, every well-managed business makes accident prevention an integral part of its operations. With this incentive, the communications, cement, steel and shipbuilding industries have reduced their injury frequency rate by over 70% in the last ten years.

The O'Malley study, submitted to the Administration through Senator Saltonstall shows the following comparisons between the accident frequency rates of the above industries and those of four government subdivisions:

INDUSTRY	
a. Communications	1.79
b. Cement Industry	4.22
c. Steel Industry	4.50
d. Shipbuilding Industry	4.81
Average	3.83

GOVERNMENT SUBDIVISIONS	
District of Columbia	18.8
General Services Admn.	15.9
Interior Department	14.8
Post Office Department	13.1
Average	15.6

Private Industry Better

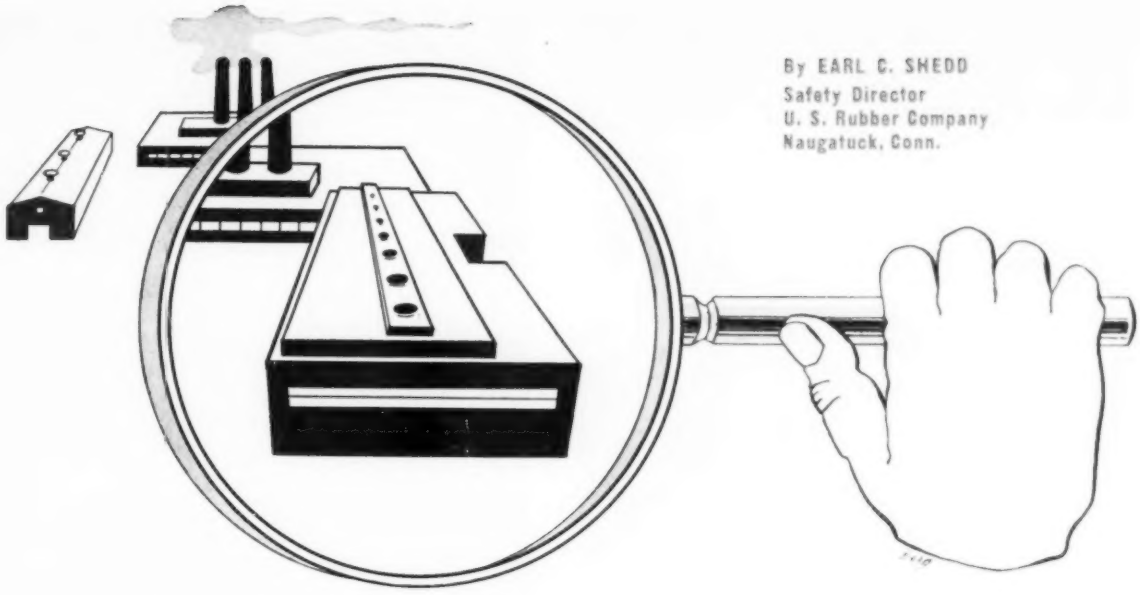
Other comparisons between government and private industry are equally striking. During the same 1947–51 period in which the government accident frequency was being reduced by two-tenths of one percent, the automobile industry reduced its accident frequency by 35%; one company—General Motors—reduced its frequency by 50%. The DuPont Company's frequency was 10.3% in 1926; by 1951 it had fallen to .67%.

The majority of government employees are engaged in office work, certainly not a hazardous occupation. Yet the accident frequency of the glass, aircraft, chemical, rubber and textile industries is better by nearly 2% than that of the Federal government, and their operations involve much greater hazards.

Aware that Ned H. Dearborn, President of the National Safety Council, had charged in February, 1952, that Federal department heads employing thousands of workers displayed an attitude toward safety as careless and unthinking as that of the most backward industrial management of two generations ago, Senator Saltonstall invited Mr. Dearborn to participate with Mr. O'Malley in drawing up recommended solutions. The Senator then arranged for Mr. Sidney J. Williams, Vice President of the National Safety Council and Mr. O'Malley to present their recom-

(Continued on page 38)

Safety-minded industry is prepared for emergencies. Note fire extinguishers and emergency showers in the corridor of this synthetic organic chemicals laboratory.



By EARL C. SHEDD
Safety Director
U. S. Rubber Company
Naugatuck, Conn.

SPOT YOUR HAZARDS

HERE are some inspection ideas which may or may not be in use elsewhere. Under this plan, safety inspections are not carried out on a time schedule. The inspector spends as much time in each department of the plant as he feels necessary. This means not only a careful scrutiny of existing physical hazards but visualization of potential hazards which might occur through the actions of an operator.

For example, an operator dropped a shoe last and moved a small table to get it. However, the table had been moved into the path of a tray conveyor which pushed the table back, catching the employee's head between the table and the conveyor. Her cry of pain brought a fellow employee who stopped the conveyor and rescued the injured. Luckily she lost only a day from work.

This is the type of situation which the unscheduled inspection may pick up, that the cursory scheduled inspection would not. To spot as many hazards as possible, you must take time to observe operations and to call freely on the imagination to visualize every conceivable eventuality.

The inspector dictates a preliminary report which is almost in the form of a list of hazards with only very brief explanations where absolutely necessary. The report also sets a date and time for a conference with the foreman and maintenance representative. At this conference the report is reviewed item by item and agreement reached as to the degree of hazard, proper corrective action, responsibility for correction and date the correction is to be completed. High hazard items are scheduled for prior completion. Items of questionable hazard are tabled for later consideration. Follow up meetings are scheduled at 2 week intervals. This is putting inspections on an unscheduled basis with follow-up on a scheduled basis.

Pre-Installation Inspections

Another essential in discovering hazards is advanced notification and inspection of all new equipment before it is introduced into the plant. Weekly contacts with the engineering department in addition to their voluntary notifications, are essential in order to eliminate all possibility of unsafe or inadequately guarded equipment getting into the plant. Many times, minor changes or additions can make a hazardous machine completely safe. For example, one of our engineers notified us of 2 new presses being developed. Examination showed a severe bite hazard. Hand feed was unavoidable. However, it was found possible to hold the material mechanically, and addition of two hand operating controls made certain that the operator's hands were in the clear at the moment of impact.

In checking new equipment, free use of the imagination is as essential as in departmental inspections. Will faulty feeding cause something to shatter or fly, indicating an eye hazard? Will minor difficulties with the equipment tempt the operator to make adjustments independent of supervision and a mechanic? At our plant, a big percentage of new equipment is built right in our own machine shop. This gives us time to study and suggest while it is being built.

It is well to make this analysis a joint project between the engineer, the production foreman and the safety inspector. The engineer will be familiar with the machine specifi-

(Continued on page 26)

HANDS YOU CAN BET ON!

FEATURE

First article of a feature series on Protective Clothing. The remaining articles will appear in the November and December issues.

THE hand can be quicker than the eye . . . but so are many machines and other industrial equipment and processes which endanger the worker. One mistake with an unprotected hand can end its usefulness forever. The magnitude of this danger can be judged by the fact that 25 percent of industrial injuries are injuries to hands and fingers. In many cases the figure is much higher.

For example, the tank plant of the Cadillac Motor Car Division of the General Motors Corporation laid heavy stress on hand protection in its safety program when it found that 60 percent of its injuries had been hand injuries. C. O. Murray, tank plant safety director, says, "Many of these could have been prevented by the workers checking their jobs more closely."

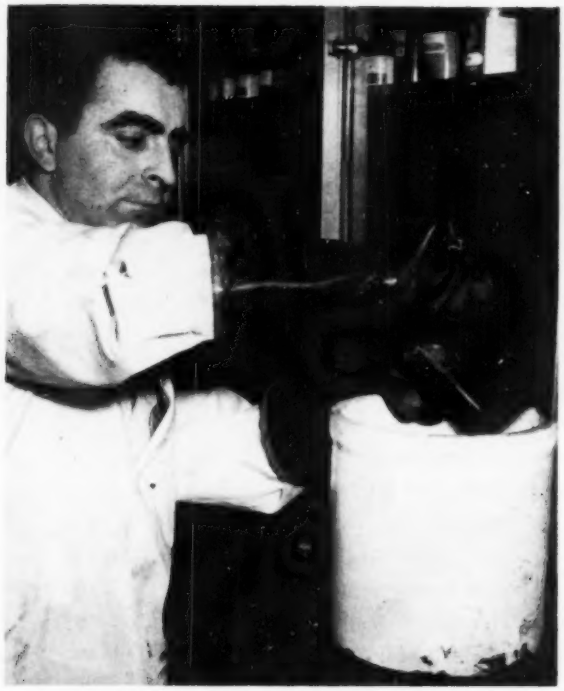
Some common danger signs to look for are improperly stacked material and odd-shaped pieces that have a tendency to roll easily. Others are leaking chemical containers, carelessly placed tools, frayed cables and sharp edges, metal scraps, tight working spaces where hands can be easily squeezed and anything that can move suddenly.

The use of the right kind of glove—the right way—in the right places is a good formula for healthier hands and quality production. Gloves are ideal for protecting against sharp objects, heat, electrical shock, and chemicals. It is important, however, to emphasize the right glove for the job. Protective gloves designed for one job simply won't do for another kind of work. For work around moving machinery, gloves themselves constitute a hazard, and should not be worn.

In most industrial jobs, however, wearing the proper gloves puts safety right in the worker's hand. The correctly protected Cadillac workers in these pictures hold all the trumps against hazards!

HEAVY LEATHER GLOVES fully protect hands of worker welding heavy armor plate. With the addition of related protective gear such as helmet, leggings, and large asbestos apron, wearer gets maximum protection against serious hazards of burns and glare.

HEAVY RUBBER GLOVES, worn inside leather outer gloves, keep electrician from shocking himself on "hot" contacts. Because of the great personal danger in an electrical accident, these gloves are frequently tested. Other gloves are no substitute.



LONG HEAVY RUBBER GLOVES guard another pair of hands, this time against chemical burns. Covering the forearm, these gloves are commonly used in laboratories and maintenance departments where mixing and pouring chemicals present definite accident hazards.

LIGHT LEATHER GLOVES are worn by this millwright to protect himself against burrs, sharp edges, and blisters when working with small parts. They are flexible enough to permit him to feel his work, but strong enough to adequately guard against most tools.

LIGHT RUBBER GLOVES make excellent hand protection for operations like chip-handling, shown here. Lightweight, these gloves help handler avoid cuts and skin irritations from cutting oil. Special gloves are needed when stronger oils and greases are used.

ASBESTOS GLOVES are invaluable for hot jobs. Here worker safely pulls part from heat treat oven. However, asbestos gloves are of varying thicknesses, and care should be taken to instruct the worker in the heat limitations of the glove his job requires.

TWOFOLD PROTECTION:

The Man Who Selects It... The Man Who Wears It Can Count On

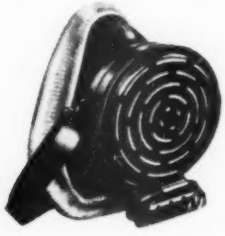
AO SAFETY EQUIPMENT

With today's vastly increased compensation costs, plant safety has become a more serious matter than ever before. The job of the Safety Director becomes daily more important. The need to safeguard workers (and their output) with *the best means available* has become the basic function of specialists.

To these specialists, AO offers safety equipment that will never let them down in terms of protection and serviceability. To the workers who wear this equipment, AO offers a security and peace of mind which can never be measured in dollars and cents alone. To both groups AO offers the satisfaction of knowing that there is no better safety equipment made per safety dollar expended.

AO's COMPLETE line of safety glasses, clothing, gloves and respirators can save *you* money, lost man hours and lost production in your plant. These products do the job — and do it well — for *every* job, every time. Your nearest AO Safety Products Representative can *prove* it to you.

If you need safety glasses . . . AO, the world's largest manufacturer of optical equipment, is headquarters. Yes, and you'll find leadership here evidenced in over twenty types of safety glasses—each meeting a need of industry. Spectacle type FUL-VUE . . . cup type . . . welders' eyewear . . . wide-angle vision models . . . heat-treated glass or plastic, or special air conditioned models . . . AO has them all.



If you need respirators . . . AO can simplify the protection problem (and inventories) with respirators that are quickly, easily converted from gas to dust types and vice versa by interchange of cartridge or filter. You pay for one face mask yet can obtain the protection of seven or eight respirators for combating a multitude of dust and chemical fume hazards. Double or single cartridge models.

AO's Industrial Vision Program increases production, decreases accidents. Write today for booklet "Improved Industrial Vision" to 54 Vision Park, Southbridge, Mass.

American Optical

SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS BRANCHES IN PRINCIPAL CITIES

If you need protective clothing or gloves . . . You'll find them at AO in horsehide, cowhide, asbestos, neoprene latex and flame-resisting duck . . . comfortable, long-wearing and tailored for the job. Here, from one source of supply, is *dependable* protection in coats, jackets, leggings, spats and pants . . . in aprons and sleeves . . . in gloves, mittens, hand pads and finger guards. Check your needs now.

SEE US AT BOOTHS 79, 80, 81, NATIONAL SAFETY SHOW

cations. The production foreman will be able to visualize its relationship to the production pattern. The safety inspector will be familiar with injuries that have been caused by similar equipment. The safety inspector should check the machine after its approved installation to be sure that no potential hazards have been missed.

Materials Inspection

It is equally important to apply the above procedures to materials. In a plant recently taken over, corrugated cardboard parts were being glued together. Although, naturally, it might be assumed that this glue was an innocuous material, the inspector carefully examined the drum label and, not satisfied, contacted the supplier. It was found that the "glue" contained a high percentage of carbon tetrachloride and was actually a hazardous cement. At the company's request, the supplier substituted a harmless glue which also turned out to be more desirable from a production point of view. Chemical analysis confirmed the supplier's claim that the substitute was nontoxic. Such materials should be checked before introduction into the plant by advance tip-offs from the company laboratory, product development and purchasing departments. The safety inspector should also check employees for development of unsafe habits. This can be done during the unscheduled safety audits. Needless to say, any such unsafe habits should be corrected at once. If this is impossible, as sometimes happens, the employee should be removed to a job where he cannot cause injury to himself or to a fellow worker.

Fact Finding Inquiry

Another phase of hazard control is the fact finding inquiry which is used for investigating certain accidents or fires. It is not always advisable to hold such an inquiry. One should be held if anything can be gained either in determining the exact circumstances of the accident or in impressing on plant employees the attitude of management in respect to accidents. One should not be held if the facts are easily obtained otherwise and nothing else is to be gained.

To stress one of the most important principles to be observed in these inquiries here is a brief quote from the company's written standard practice on this subject: "Create cooperative, contributory attitude on part of all: adopt inquiring attitude; avoid fixing blame; do not brow-beat or cross-examine; do not gang up on witnesses; ask only questions which will bring out facts important to corrective action."

Our plant superintendents, who conduct these meetings, do an outstanding job, through their introductory remarks, in impressing on the employees that we are interested only in determining what can be done to prevent recurrence of such an injury. Some inquiries have been held solely for the purpose of impressing this fact on employees.

Re-Installation Inspection

To illustrate a loophole which was discovered through this type of inquiry, here is the story of a machine which was carefully studied and safeguards added during development. After installation, safeguards were altered to make it absolutely impossible for the operator to get into the point of operation. And still, that is exactly what did happen.

The machine consisted of a bottom roll with nearly 1000 phonograph needles embedded in its surface, projecting about ⅜ of an inch from the surface of the roll. The top roll was a soft rubber roll covered with cloth. Cloth parts were perforated by feeding them between the two rolls. A guard was added across the bite of these rolls during construction and extended after installation, completely closing the bite to even the smallest finger.

This job lasted only a couple of months, whereupon the machine was placed in the storage area of that department. Some time later a new problem arose and an employee remembered this machine and told the new foreman of the department about it. It was tried and proved effective. A new employee who had never seen the machine previously was given instructions and assigned to the operation. A part which he was feeding, stuck to the upper roll; and, as the employee tried to catch it, his hand was caught in the bite. Before he could stop the machine, the phonograph needles pushed the back of his hand down between his fingers. Fortunately, surgical restoration appears to have saved full usefulness of the hand. The guard was later found, with screws rusted, on a lower shelf of the machine.

A new standard practice has now been written requiring that no machine which has been in disuse or storage can be reintroduced into production until it has been thoroughly checked from a mechanical and safety point of view by the engineering and safety departments.

In addition, the possibility of securing a black and yellow decalcomania reading "Guard Off" to be mounted behind each guard is being investigated. When the guard is in place, it will be obscured. If the guard is taken off it is immediately visible as a warning to everyone. Inspection has proven to be an important spotter of hazards.

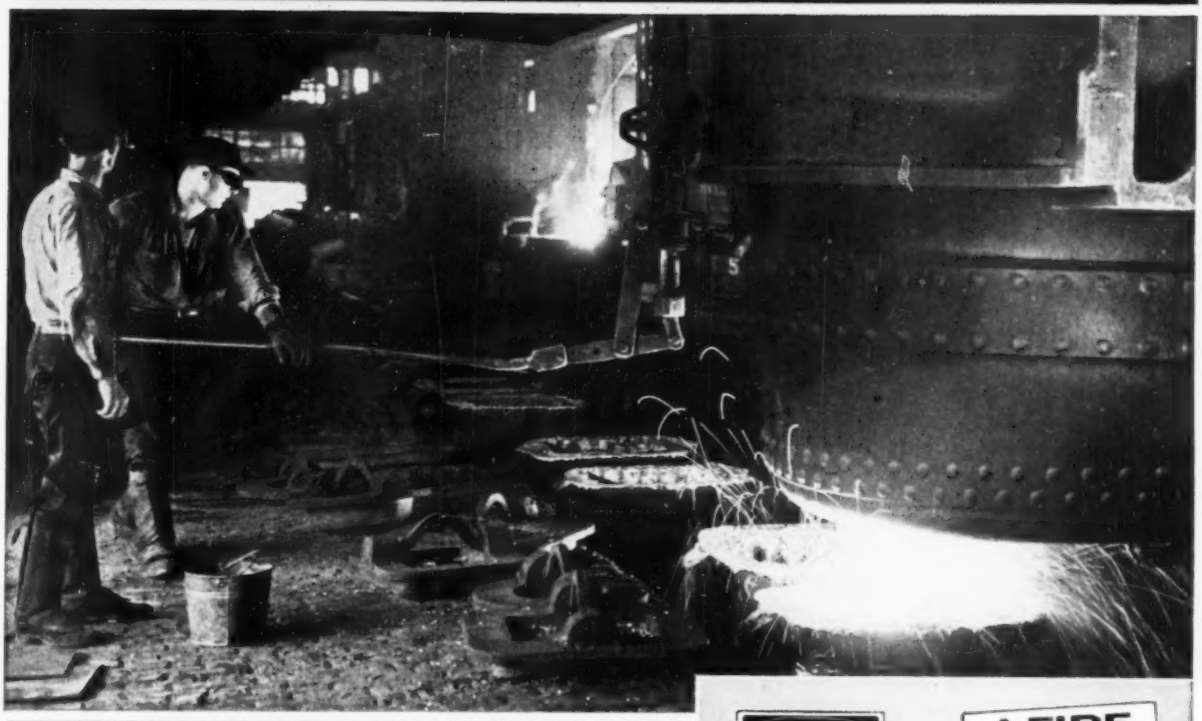
From an address delivered before the Greater New York Safety Council Convention.

N. Y. Safety Convention Will Run 5 Days in '54

NEW YORK'S 1954 safety convention and exposition will run 5 days instead of the usual four. The convention, the 24th annual, will be held April 5 through 9 at the Hotel Statler. This is the first time that the safety convention, largest in the East, will run through a full business week.

The Greater New York Safety Council, sponsor of the event, announces the election of George E. Decker, senior engineer of the Aetna Casualty and Surety Company, as general chairman for the 1954 convention and exposition.

STONEHOUSE SIGNS For ACCIDENT PREVENTION



Pouring Molten Steel

High production is a fine goal. But with it goes the responsibility to protect and safeguard workers against the threat of accidental injury—even death.

Every production quota should include an effective safety program. It can be done with the help of

STONEHOUSE SIGNS

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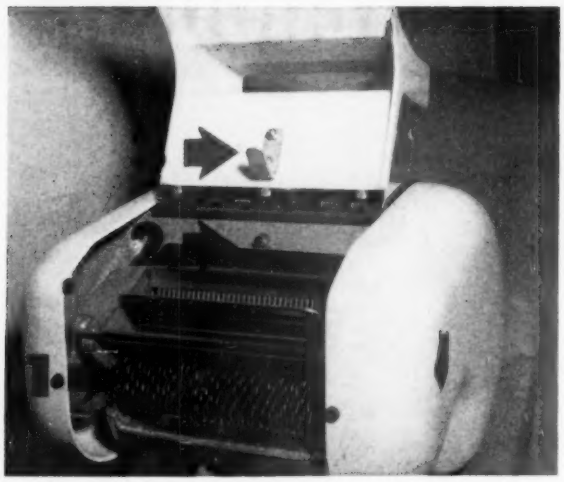
ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For further details, use Key # K-15 on free Inquiry Card on page 117)

WHAT



Steak machine showing hopper in open position. When hopper is closed, its depth is sufficient to make it impossible for the operator to reach the revolving cutters (1). To make certain that the machine is not used without the protective hopper, an automatic cut-out switch (2), actuated by a bracket on the hopper (3), permits the machine to operate when the hopper is closed, but cuts off the current if anyone tries to raise the hopper.

By JOSEPH OKUN, Safety Inspector
Division of Industrial Safety Service
New York State Department of Labor

TOP management is fully responsible for safety in plants and must accept this responsibility in the same way that it accepts any undertaking of importance. Management necessarily trains the worker for a particular job. With very little additional effort, management can provide him with safe working conditions. Generally speaking, a well-trained worker will perform his task without interruption and "accident-free," unless his surrounding physical conditions are not taken into consideration and made as safe as possible.

Which to Control?

Machines and men operate together in industry to process and manufacture the goods of the economy. The machine can be controlled without great difficulty, but the habits of the man operating the machine are sometimes hard to control. We must concede that a man in operating a machine may err in judgment, mode of operation and sequence, and so become prey to accidents. He may, in his sincere desire to retrieve material improperly fed into the machine, also be injured. Monotonous repetition of the machine, or some psychological problem can bring the operator to injury. ***However, in all cases, it is the machine that bites the hand that feeds it; and the machine is the easier to control.***

Any improvement in the way of a better guard or protective device for a machine, to reduce or eliminate its hazards; or a better design, better construction or a better method of operation is a substantial forward step in reducing accidents. The proper safeguarding of machines

GUARDS THE GUARD ?

should be the concern of management. All production schedules and processes, should be thoroughly checked to determine whether they can be performed in a safer way. It is also advisable to create some sort of a safety organization, or delegate the authority to one person, if the plant is small, to systematically check all operating and physical conditions. Notwithstanding all precautions, accidents will sometimes occur because someone did not foresee a machine hazard. In such cases it is important to investigate with the purpose of determining the cause, so that a corrected method of procedure or a revised guard can be devised to prevent a recurrence of the accident.

Where to Protect!

In general, machinery may be divided into two areas for safety inspection, namely the point of operation and the transmission areas. By transmission is meant the moving parts and gadgets which carry and transmit power from a source to the machine. The point of operation of the machine is the part of the machine where stock or material is actually inserted in the machine for forming, shaping or any other necessary operation. Of the two areas, man is closer to the point of operation than to the transmission since he normally feeds the machine.

Point of Operation Guards

Effective guarding should be the fullest possible at the point of operation, yet should be practical. The point of operation of a machine cannot be so fully enclosed that the operator finds it impossible to do the work required. On the other hand, of course, incomplete guarding will cause accidents. However, investigations which seek merely to find the cause without placing blame, have shown that a guard that obstructs the operator though it protects him is often more dangerous than incomplete guarding. The simple reason is that the operator will remove the inefficient guard in order to do his work and will then be more prone to accident . . . with no guard at all.

Built-In Guards

The best type of safety device at the point of operation is one that is built into the machine. For a power press used for stamping, the best safety device is one that is an integral part of the machine or dies. Such arrangements are ideal and preclude the necessity of creating and applying guards, which often are makeshift, improper and difficult to maintain. However, until machines are properly and totally guarded by the machine manufacturer, it becomes mandatory to provide practical guards, so arranged that they do not interfere with the operator's vision or ability to work. They should also be arranged with

interlocking or cut-out devices or switches, so that if it becomes necessary to remove the guard for any reason whatsoever, the press cannot be operated again until the guard is replaced in its full protective position. The provision of this interlocking or cut-out switch is in fact an arrangement where the guard itself has been guarded.

Interlock Guards

There are numerous applications for such devices in connection with the point of operation of a machine. The idea of interlocking or cut-out switches is not new. It has been used on many machines to shut off electrical power or to make inoperative the machine cycle. The primary purpose for interlocks and switches is to assure the operator that guards are in proper place. There is nothing difficult nor expensive in fully guarding a point of operation in this manner.

To further illustrate the functions of an interlock here is a description of such a device used on power paper cutters. Both hands of the operator are required simultaneously to operate the starting mechanism of the machine, keeping the operator's hands away from the cutting knife. Notwithstanding that these machines are equipped with reliable brakes and knockout devices, a device is required to prevent a second cycle or stroke of the knife in the event of brake or stopping mechanism failure. It is anticipated that something may go wrong even with a well-designed and constructed machine. In order to be absolutely sure of preventing an accident, a solid steel shaft can be interposed, at very little extra cost, which automatically positions itself under the knife bar, always ready to prevent a second stroke of the knife, should anything go wrong to any or all of the mechanisms which control the action of the knife. This safety stop device is in fact an interlock and a means of guarding the guard.

In bakeries, the horizontal tilting-type dough mixer is required to have a cover over the top of the mixer. The heavy duty agitators of the mixer are thus separated from the operator's hands. However, when the mixer is tilted to pour out the dough the operator may reach his hands into the bowl and receive a serious or fatal injury. To prevent operators from reaching into the bowl while this operation is being performed the covers have been made stationary and horizontal even when the bowl is tilted. If the operator attempts to tilt the cover to reach inside, an interlocking device cuts the current off. Four inches is allowed as an opening into which the operator can look to watch the movement of the dough. If he attempts to enlarge the opening the power is shut off. Here again is the interlocking device guarding the guard.

Further Illustrations

This principle can be further illustrated by the use of an interlocking device to guard the guard on a butter print machine. This machine consists essentially of one or two motor driven worms, such as are used on the domestic meat-grinder, though much larger in diameter, which revolve inwardly towards an extruder dieshaped to requirements. A slab of butter is thrown into the housing containing the revolving worms and they force it out into quarter pounds of print butter. All of these machines are provided with hoppers that prevent the operators' fingers from reaching into the revolving worms. However, since it is necessary to comply with health laws, all parts of the machine must be thoroughly cleaned with hot water or steam at the end of the day's operations. As a result of this necessary disassembly, it may be that the operator will forget to replace or assemble the safety hopper the following day. In order that this possibility may not occur an electrical interlock is installed so that no power can be applied to the worms until the hopper is in place. Once again here is a guard for a guard.

As a final illustration, consider the steak machine or tenderizer which is a power-driven unit causing two rows of cutters to turn inwardly and used commercially for tenderizing steaks. The operator of the machine drops cuts of steaks into a narrow aperture of the hopper, and the meat falls by gravity between the two sets of revolving cutters operating inside the framework. Here the hopper is the guard. Inasmuch as it is necessary to cleanse the machine at the end of a day's operation, the hinged hopper or guard is swung back and the cutters removed, cleansed and assembled for the next day's work. Ordinarily, one would think that the hopper was sufficient protection and that no operator would swing the hopper back to drop the steaks directly between the rolls. Strange as it may seem, there appears to be no record of an injury while feeding the steaks. Then why guard the guard?

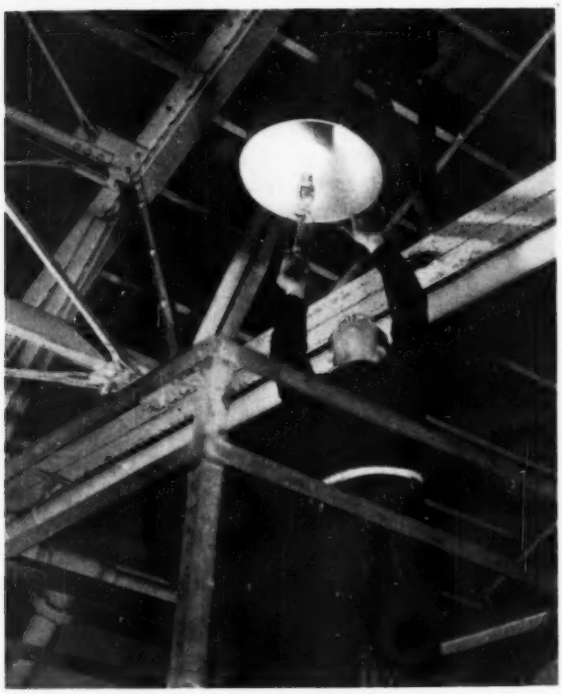
For the simple reason that operators can do other things that are hazardous besides feed steak into the machine. Recently, one employee found that she could use the steak machine, with the guard or hopper open, for shredding carrots to be used in cole slaw preparations. The carrot slipped from her hand into the two inward rotating revolving cutters; and, while attempting to retrieve it, her hand caught between the cutters. She was rushed to the hospital with the cutters on her lacerated hand. To prevent recurrence of this type of accident all manufacturers who build this type of machine are providing cut-out switches, so arranged that swinging the hopper away from its normal position stops the machine.

These illustrations are but a few of the instances where interlocks and switches can be used to further the cause of safety and prevent accidents. Management should keep their use in mind in working out a well-defined policy of accident prevention. Such a program means that all machines in operation should not only be properly and safely guarded but inspected periodically and properly maintained.

From an address presented at the 23rd Greater New York Safety Convention.

Picture by courtesy of SirSteak Machinery Inc.

Maintenance man quickly and efficiently replaces high-bay lamp, since sturdy work platform gives him secure footing.



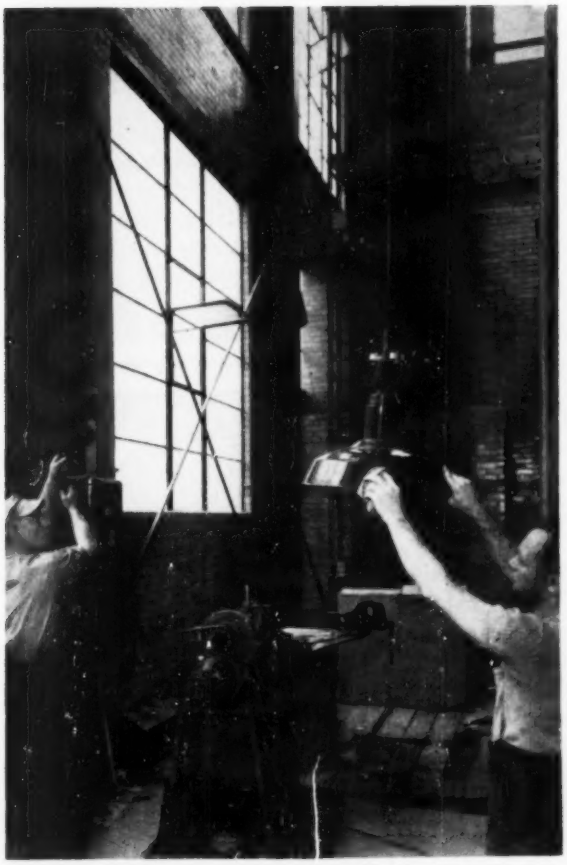
LAMPLIGHTERS —MODERN STYLE

Third of a feature series on Proper Lighting. The first two articles appeared in the August and September issues.

By ROBERT G. EDSALL
Works Electrical Engineer
Westinghouse Electric Corp.
East Pittsburgh, Pa.

LIGHTING fixtures are serviced in many different ways, the method depending on how they are mounted. Low levels, up to 10 to 12 feet, which are usually found in offices, can be reached from step-ladders. In most of the medium sized shops the elevation is about 25 feet, in which case the luminaires may be serviced from extension ladders and in some instances from the top of bridge cranes. In higher ceilings, where the mounting height is 42 feet or more, luminaires should always be serviced from bridge cranes.

In offices where the installations are ceiling-mounted fluorescent luminaires, maintenance can usually be performed by teams of 2 to 4 men with the necessary ladders and cleaning tanks. One man on the



Two men lower high-bay lamp installation to plant floor for safe and easy maintenance. Note team operation here.

Member of maintenance team washes lamp housing in detergent solution of movable tank. Housing is replaced wet.

ladder removes the lamps and the louvers and passes them to the men on the floor for cleaning.

In cleaning and replacing fluorescent lamps it has been found that a major portion of time is spent in cleaning the louver. In our plant, until about 6 months ago, it took about 15 minutes to clean a single unit containing four 40-watt lamps and the louver. We tried many detergents in an effort to reduce the cleaning time with little or no success. Then we tried a substance for cleaning chemical glassware. Reasoning that anything that would clean chemical apparatus would clean louvers, we constructed a shallow tank to hold approximately 40 gallons of water. We added the detergent and everything worked fine. All that had to be done was slush the louver in the solution for 30 seconds, shake off the excess water, and reinstall the louver while still wet. Cleaning time was cut to 2 minutes. However, 2 weeks later the louver turned a dirty brown. The concentration of the solution was too high. After juggling the ratio of cleaner to water for a while, we hit on the right proportions and now the luminaires are sparkling clean in a fraction of the time the cleaning job used to take.

Fluorescent Problems

On the subject of fluorescent lighting, here are 2 solutions to maintenance problems that troubled our plant for a time.

One of the most annoying lighting difficulties is flickering fluorescent lamps. The effects are twofold: first, there is the disturbing effect on employees; and, second, the hazard of burning out the ballast by excessive starting current. The trouble can be eliminated by the use of no-blink starters that automatically cut off the offending lamp if the current is excessive because of flickering lamps or lamps that are near the limit of their life. A flickering lamp is readily noticed, but our plant maintenance crew has found from actual experience that one or more extinguished tubes are not noticeable. In fact, we are planning to set up a program of disregarding most calls for replacement of burned out lamps and make replacements only on cleaning schedules. Just how well this plan will work can be judged only by future experience.

Plastic Louvers

The second problem concerns plastic louvers. When these units were first installed, they were removed from their shipping cartons and installed with a minimum of handling. All went well until the first cleaning, when they were cleaned with soap and water and dried with a cloth. Two weeks later, the louvers were as dirty as if they had been in service 4 months. The drying had loaded the surface with static electricity, which actually sucked dirt to the louver. The cure was to wash them with a solution containing a soapless cleaner, rinse them in a clear water bath, and hang them while they were still wet.

In our plant all high-bay installations are put up in such a manner that they can be reached from the catwalks of overhead bridge cranes. In some instances, the clearance between the catwalk on the crane and the roof truss is so great that permanent platforms are mounted on the crane trolleys. All high-bay lighting is hung from safe change hangers so that the entire unit can be removed for maintenance. These units are lowered to the floor for cleaning and the adding of required new lamps.

Watch Your Voltage!

It is important, as a part of lighting maintenance, to watch your voltage. Incandescent lamps, as a general rule, should be burned at their rated voltage. Over-voltage operation will result in higher wattage, higher efficiency, and higher light output, but shorter lamp life. Under-voltage burning, though it will increase lamp life, causes a reduction in wattage, in efficiency, and in light output. A voltage as little as 5 per cent below normal results in a loss of light amounting to more than 16 per cent, with a saving in wattage of only 8 per cent. Since lamp cost is always small in comparison with the cost of the power to operate the lamp, the increased lamp life which accompanies reduced voltage does not begin to compensate economically for the loss in light output. Maintenance of the proper voltage is, therefore, an important factor in obtaining good performance from lamps and lighting installations.

The life of a fluorescent lamp is also affected by the voltage and current supplied it. It is also affected seriously by the number of times it is started. Electron emission material is "sputtered" off from the electrode continuously during the operation of the lamp, and in particularly

(Continued on page 38)

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New Handbook on Built-In Guards

A PAMPHLET which summarizes the findings of safety authorities on the subject of built-in machinery guards is now available in limited free supply from the Bureau of Labor Standards.

It tells how to save lives, injuries and money by promoting designed-in guarding. The necessity for guarding before an accident and the economy of installing a proper guard before the machine is installed rather than an inexpensive, ineffective one later is stressed.

Typical industries which use built-in guards are named and the reason for the lack of built-in safety on all machines explained. The clearing up of the conflict between state codes on machinery guarding is emphasized and the pamphlet ends with a description of the necessary steps for built-in guarding.

Requests for this literature, Bulletin No. 164, should be addressed to the Director of Labor Standards, U. S. Department of Labor, Washington 25, D. C.

Safety Educator Honored

DR. HERBERT J. STACK, director of New York University's Center for Safety Education, has received one of the first honorary degrees recognizing national leadership in the campaign to cut the country's traffic death toll.

Presentation of the honorary doctor of education degree took place at the University of Massachusetts commencement program June 7 in Amherst, Mass. Dr. Stack was cited as "a pioneer and outstanding leader of a program designed to conserve human lives as far as possible in a technological age when 42 million American automobiles threaten to divide our population into the quick and the dead."

Dr. Stack helped establish the NYU Center for Safety Education 15 years ago. He has written books and articles that are standard references in the field.

TWO ANSWERS TO ACCIDENTS

✓ PERSONAL PROTECTION

✓ PERSONAL INSTRUCTION

EMPLOYING over 14,000 people in a modern aircraft plant, the McDonnell Aircraft Corporation manufactures and develops jet-propelled fighter planes, helicopters and guided missiles for the Armed Forces.

This experimental work requires constant retooling, revision of production techniques and employment of intricate machining processes, all of which are conducive to accidents. Much of the work requires working to close tolerances, thus inviting additional injuries. Normal, as well as extra-keen eyesight, is also required for many job classifications.

Shortly after the company started in business in 1939, Mr. A. C. Grosse was appointed safety engineer. He introduced a vigorous campaign of publicizing safety and indoctrinating personnel in safety practices. He did it by using posters, bulletin boards, the company newspaper and by personal talks. Many types of personal protective equipment have been made available to employees free of charge, such as goggles, respirators, face shields, clothing, etc.

Nurse administers test with sight-screening device to employee. Device records visual skill functions for near and far distances.

Personal Touch

Mr. Grosse underlines all phases of his safety program with one essential—the ***personal*** factor. He makes it a point to "sell" his ideas by personal contact. His safety committee, of 18 volunteers, covers every department in the plant with the idea that an ounce of prevention is worth a pound of cure. This safety committee is the heart of his program. Each man is carefully trained by lectures, printed material, safety films, and a written examination. The corporation's insurance representative assists in all phases of the training program.

Mr. Grosse holds monthly meetings with his safety committee, which has now grown to 38 members. Accidents are discussed and preventive measures suggested and implemented. Mr. Grosse's office also personally interviews every newly-hired employee and briefs him in company safety procedures. This has proved more valuable than giving the newly-hired man a set of printed instructions.

McDonnell also employs a large number of physically handicapped veterans and others. These employees' disabilities are accurately listed in case of future accidents. The employee's badge number makes possible immediate identification and helps save valuable minutes in instituting remedial measures in case the victim is unconscious.

In addition, Mr. Grosse's philosophy is that every accident has causes direct and indirect which can be traced to working conditions, home life, financial worries, or any factor which can take a person's mind off his task. Thus the human element is again brought into the safety picture. Pleasant working conditions, wide aisles,

Shattered prescription safety glasses saved sight of electroplater's eye when chromium globule struck them with severe impact.

good lighting, excellent first aid stations, rest periods and recreation programs all help to keep employees alert to possible accidents.

The plant has a small, well-equipped hospital and medical department headed by 4 doctors. The first aid department has 4 stations and is operated by 14 full-time registered nurses. A complete record is kept on every employee who comes to the first aid station, regardless of whether it is for an aspirin or treatment for an injury.

An industrial vision program has been in effect at the aircraft plant since August, 1950. A sight-screening instrument which records 7 functions of visual skill, at both distance and near, has been used to test approximately 14,000 employees. Of this number 23 percent were referred for additional professional eye care. Employees who need corrective-protective goggles on the job must purchase safety goggles within 30 days after employment.

Clear vision is also essential to personal safety; and, for the convenience of workers, cleaning kits have been installed at all of the tool cribs.

Safety bulletins are changed every two weeks. The company maintains a safety shoe store operated by an outside vendor. Employees may buy shoes on company time on a payroll deduction plan. The only recent foot injuries have been suffered by employees who do not wear safety shoes. All employees who are subjected to jet engine noises are checked every year by the plant medical director using the audiometer test. These records are kept from year to year so they can be compared to see if the subject has any increased deficiency of hearing. The Board of Health of the City of St. Louis has been very cooperative in running tests throughout the plant where employees are subjected to fumes, dust hazards, etc. All employees in the foundry are checked once a year for lead poisoning. The company also underwrites a group insurance plan to provide financial protection for employees against accidents, sickness and loss of life.

By attacking their accident problem thoroughly, the company has curtailed injuries and increased production and efficiency. In addition the safety program has effectively contributed to employee protection and well-being.

Pictures by Courtesy of McDonnell Aircraft Corp.

Lamp Lighters

(Continued from page 32)

large quantities each time the lamp starts. Since the normal end of life is reached when the emission material from one of the electrodes is consumed, the greater the number of burning hours per start, the longer the life of the lamp. The rated average life of a 100-watt, 60-inch lamp is 2500 hours if it is started every 3 hours, 4500 hours if it is started every 6 hours, and 6500 hours on a 12 hour start.

The voltage of the luminaire should be kept well within the operating range of the ballast. For normal supply voltages, this range is from 110 to 125 volts. Low voltage, as well as high voltage, reduces efficiency and shortens lamp life. This is in contrast to its effect on filament lamps where it reduces efficiency but prolongs life. Low voltage may also cause instability in the arc; voltages over that specified result in excessive operating current, and may not only overheat the ballast but also cause early lamp failure.

From an address delivered at the Fourth Plant Maintenance Show.
Pictures by courtesy of Westinghouse Electric Corporation.

Gov't Safety Laxity

(Continued from page 20)

mendations to Sherman Adams, Assistant to President Eisenhower.

These recommendations, Senator Saltonstall announced, include the establishment of a Federal Safety Council under a fulltime director and measures which would require governmental agencies either to meet employees' compensation costs out of an appropriation based on a "proper" accident rate for the department concerned, or to seek deficiency appropriations to compensate bad loss experience. The latter recommendation, Senator Saltonstall explained, is designed to remedy the present situation under which no agency is accountable for its accident costs nor are the accident costs deductible from that agency's budget.

On June 25 of this year, Senator Saltonstall announced that he had urged the President to establish a Federal Safety Council under the direction of a full-time official whose responsibility it would be to recommend steps toward cutting down the tremendous loss to the Government in needless accidents to Federal employees.

While criticizing the Government in general for a safety record poorer than that of private industry, the Senator also pointed out that some departments have done an outstanding job in the field of accident prevention. He commended in particular the Navy Ship Yards, the Government Printing Office, and the Atomic Energy Commission.

In conjunction with the recommendation of a Federal Safety Council with a full-time Director, Senator Saltonstall stressed the desirability of making each Government department more directly responsible for its own losses by requiring it to seek annual appropriations sufficient to cover its expectable loss experience. The Senator said that he was taking active steps to further these recommendations.

"A valuable first step has been taken," Senator Saltonstall said, "in bringing the matter squarely to the attention of the Executive Department. I am confident that changes will be made where changes are necessary in order to provide the framework for an effort that will benefit thousands of government workers and bring about the savings of millions of dollars to the government and to the taxpayers. Only by establishing the machinery for a sound accident prevention program can reality be given to the much-worn phrase 'The Federal government should lead, not lag in the important field of employees' security.'"

Picture credits: Westinghouse Electric Corp. and Eastman-Kodak Co.

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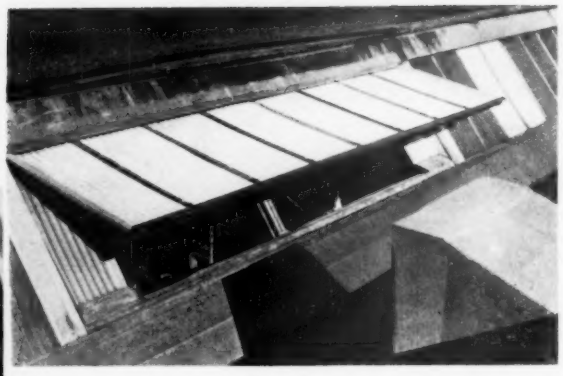
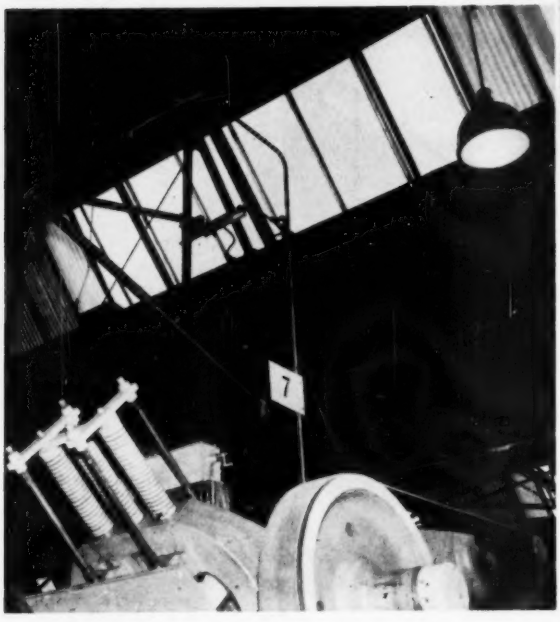
(For further details, use Key # K-20 on free Inquiry Card on page 117)

View of roof shows opening possible with plastic transoms.



Note even and glareless light transmitted by plastic transoms.



Save On Sunlighting Maintenance

ANNUAL savings of several thousands of dollars are being realized at the Crown Can Company plant in Philadelphia by the replacement of old skylight glazing with sheets of corrugated acrylic plastic. Improved daylighting and increased worker safety have emerged as collateral benefits.

Frequent cracking of the heat-absorbing glazing had developed on southern exposures of large monitor-type skylights, where the windows were subjected to wide and sometimes rapid changes in temperatures. Replacement had to follow immediately after each failure, to eliminate the danger of glass falling on workers, and to prevent leakage because of the critical nature of plating operations conducted.

Two sheets of corrugated white translucent acrylic plastic were installed on test. When the weather-resistant material had been in place for a full year, plant executives standardized on the use of the acrylic plastic for replacement whenever breakage developed in the existing sheets. Following the installation of numerous plastic panels, additional advantages were noted. The acrylic plastic diffuses light more evenly than the old glazing and reduces sky glare to a minimum.

In addition, shatter resistance and light weight of the plastic compound have enabled the company to install long transoms which, when open in summer, have a considerable cooling effect. Large-area transoms of this sort, when glazed with conventional materials, often produce breakage because of the twisting strains set up as they are opened and closed.

The corrugated acrylic sheets measure 28 by 60 inches by ¼ inch and are installed by means of the same metal connecting strips used for the old transoms.

Pictures by courtesy of Rohm and Haas Co.

NEW WILLSON Interchangeable Respirator

First truly interchangeable respirator. Requires no additional parts or accessories to use any one of the cartridges, filters, or combinations shown.

For Organic Vapors (BM2308)
For Dusts and Organic Vapors (BM2308)
For Paint Spray
For Acid Gases
For Organic Vapors and Acid Gases
For Ammonia
For Metal Fumes, Dusts, and Mists (BM2149)
For Radio-active and Beryllium Dusts, Mists or Fumes
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These Respirators are individually packed in sealed, transparent plastic bags enclosed in a sturdy metal-edge box.

Write for the new bulletin fully describing these new Willson Respirators. Standardization on the new Willson No. 800 Interchangeable Respirator can greatly simplify your respiratory protective inventory.

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Established 1870

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(For further details, use Key # K-21 on free Inquiry Card on page 117)

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visit Booth 138 at the Safety Congress ... to get your fresh "mum" daily and meet your MSCO distributor

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MSCO®

Pronounced EM-ESS-CO.

Medical Supply Company
Rockford, Illinois

(Use Key # K-22 on Inquiry Card on page 117)

"What's the Law?"

Edited by
HENRY M. GROSMAN
Counsellor at Law, Newark, N. J.

Master Superior Court, New Jersey
Member, American Bar Ass'n
Member, New Jersey Bar Ass'n
Member, National Federation Insurance Council
Past Commander, American Legion, Post 10, Newark, N. J.

Mr. Grosman

WE ALL know the old adage "Ignorance of the Law is No Excuse." However, since this editorial is addressed to plant managers, safety engineers and foremen (whose business it is to be concerned with industrial efficiency) it appears that knowledge of the law is an integral part of the training and background of those who have to do with industrial efficiency and accident prevention. Therefore, it follows that "ignorance of the law is inexcusable" because it is through knowledge of the law and its interpretations of the liability of the employer, that industry can better safeguard itself against losses through accidents and consequential loss to management.

In this, and succeeding articles, we shall endeavor to review decisions of various Courts affecting Workmen's Compensation and negligence claims, with the hope that as a result, readers will be enabled to eliminate some of the hazards which create physical disability for the worker and an expense to management, which costs have been estimated at four times the money actually paid for Workmen's Compensation benefits.

In science there is a truism that "where there is a need for change or improvement, it will eventually be met." So in social legislation, we find that the early method of compensation to workmen for industrial accidents, known as the Employer's Liability Laws, were found to be inadequate because of the Common Law defenses of assumption of risk and contributory negligence.

The first Workmen's Compensation Law was enacted in Germany in 1885. That was for sickness only. England followed in 1897, France and Italy in 1898 and Russia in 1903. These enactments were but a shadow of the Law as we now know it—but they were a step in the right direction. It is interesting to note that while we were the leading industrial nation at the turn of the century, it remained for what we consider industrially backward nations to take the lead in this type of legislation.

While fragmentary acts were passed in the United States such as Maryland in 1902, which was so innocuous as to be valueless; and Congress in 1908, which passed an act providing limited benefits for certain Federal employees; it was New Jersey which enacted the first comprehensive Workmen's Compensation Laws in the United States in 1911, and today, after being in effect 42 years, they are still being revised and their provisions altered and extended.

The New Jersey Act provides that injured employees be compensated for industrial accidents arising out of and in the course of their employment, and does away with the defenses of contributory negligence,

negligence of fellow employees, or assumption of risks—in which it differs from the old Employers Liability Law or Common Law. The only defenses are willful injury and drunkenness.

The New Jersey Courts have construed the law to be "remedial legislation, and as such is to be liberally construed." (*Bass vs. Allen Home Improvement Co.*, 8 *N.J.L.* 219.) This means—that any doubt as to whether a man's disability is due to his employment will be resolved in favor of the employee, although the Law says also that: "An employee must prove by the preponderance of the evidence that his condition is the result of his employment"—a rule which is recognized more by its breach than by its observance.

Administration of Law

After 25 years experience before the Workmen's Compensation Courts, the writer is of the opinion that the Law is good legislation—if properly administered—and makes these observations:

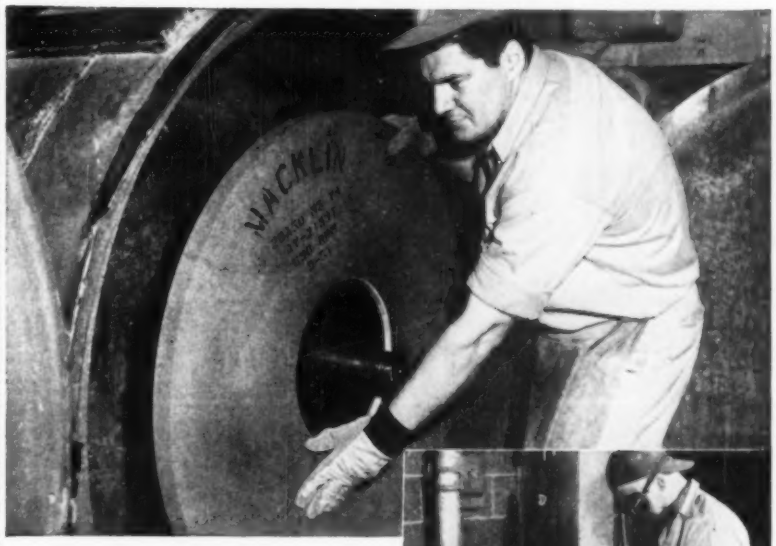
1. Industry should be just as vitally interested as Labor, as to who is appointed to direct the Department of Labor—for the Law is no better than its administration.

2. The Commissioner of Labor should be a career man not subject to group or political pressure.

3. The tendency to make awards where none are justified—such as 1% of a finger; or 1% of total permanent disability for a sprained back, where a man loses no time from work, and the treating physician certifies that he has no permanent disability—should be discouraged. While writing this article, I was informed that an award of 2½% of total has been made in a case where a man claimed a sprained back, lost no time from work, and received three heat treatments from an attending physician, who certified that he had no permanent disability. This award amounts to 13¾ weeks at $30.00 per week. The tendency to make claims for trivial accidents is stimulated by such awards, to the detriment of both Labor and Indus-

Job-fitted gloves outwear leather 3 to 1 handling grinding wheels

— at Macklin Company, Jackson, Mich.



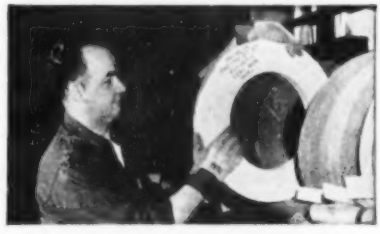
All Macklin wheels of 6" diameter or larger are speed-tested. Edmont rubber-palm Grab-it gloves outwear leather 3 to 1 on this operation.

Finishing, siding and trueing operations require much handling of abrasive wheels. Grab-it gloves wear 3 to 5 times longer on these operations.

A company that designs grinding wheels to fit specific jobs, is quick to see the advantage of using *job-fitted work gloves* on its own operations.

The Macklin Company's problem was *abrasion*. On-the-job tests showed that Edmont gloves, coated on the palm with rough-textured, live natural rubber, *wore 3 to 5 times longer than leather gloves*, although they cost less. They also proved cool because of their ventilated fabric back, and were much preferred by the workmen for flexibility and grip.

Make This Test at Our Expense: Are you interested in saving 40% to 70% of glove costs, with fewer accidents, faster work handling and improved employee attitude? Send us a brief description of your operation, materials handled and temperature condition. From our 34 types of modern coated fabric gloves we will recommend the type of glove and coating that *fits your job*, and supply free samples for testing.



Grab-it gloves with rubber coated palm and safety cuff have proved best for stockroom.

NEOX (Reinforced Neoprene) Coated Gloves

Job-fitted for use where oils, chemicals or moderate heat are present. Resist both cutting and abrasion. The Edmont line also includes reinforced plastic coated gloves which have many job applications.

Edmont Manufacturing Company
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Edmont job fitted gloves

(For further details, use Key # K-23 on free Inquiry Card on page 117)

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BEFORE INVESTIGATION!

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SEARJEANT Safety GUARDS for Punch Presses

FIT ANY PRESS 30 DAY FREE TRIAL

SWEEP GUARD

Guard sweeps across feed area on downward stroke of ram. Flat arc of guard arm travel provides greatest possible protection.

Entire guard easily swung aside for making press adjustments. Send for Bulletin 135.

Adjustable BASKET GUARD

Enclosure type guard, used for blanking and other first operation work, prevents operator from reaching in or coming in contact with moving die. Easily installed on any make punch press. Also available with clear plastic window. Write for free catalogs.

Other Guards Designed and Made by Searjeant

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SEARJEANT METAL PRODUCTS INC. 12 Pittsford Rd., MENDON, N. Y.

(For further details, use Key # K-25 on free Inquiry Card on page 117)

try as well as the general public—for in the last analysis, the public pays for all labor costs when it buys the finished product.

COURT DECISIONS

Strain-Developed Hernia Compensable

The Mississippi Supreme Court in January of this year held that where the claimant had no previous hernia and experienced severe pain and physical discomfort immediately after an accident, culminating in a complete hernia, a reversal of a referee-attorney's ruling denying compensation will be affirmed.

An employer was engaged in construction work. Metal pans, weighing about 150 pounds each, were used as forms for concrete work. When the concrete which was poured into the forms had hardened, men, of whom the claimant was one, were required to stand on a scaffold about three feet above the floor and to reach above their heads and hold the pans while a foreman pried them loose with a crowbar, after which the workmen lowered them to the floor.

On the date of the accident, the claimant's co-worker lost his grip and dropped his side of the pan. This gave the claimant a severe jerk and caused severe pain. Immediately he felt a pain in the inguinal region, and in a few minutes a protrusion at that point developed. The following day the injury was brought to the attention of the claimant's foreman who sent the claimant to the first aid station, and a day later, the company doctor found him suffering from hydrocele and prescribed a belt which the claimant obtained and started wearing. When no improvement resulted, the claimant was again examined, and a double hernia was found.

It was established that no hernia existed prior to the accident, and that the only cure would be surgery. The attorney-referee ruled that although a hernia did exist, it was not the result of the accident. The

commission reversed the ruling and the circuit court affirmed the reversal. These courts reasoned that when two men are engaged in lowering a heavy object from above-head height and one of them loses his grip, it is not only reasonable, but highly probable that a sudden, unexpected and severe strain will be placed on the other man.

(J. & B. Manufacturing Co. vs. Otis R. Cochran: Mississippi Supreme Court, No. 38, 636. Decided January 26, 1953)

Regular Work Caused Compensable Accident

"An injury to the claimant is compensable as an accident in workmen's compensation law even though the work causing it was the employee's regular work, carried on as usual." That was the reasoning of the New York Supreme Court in affirming the award of Pioli vs. Crouse-Hinds Company.

The duty of the claimant, as a molder in a plant engaged in the manufacture of electrical parts, was to scoop a ladle of molten metal from a pot, twist around, and pour the metal into molds. One day, while engaged in this operation, he felt a shock in his neck and an ache in his back. Medical opinion defined his injury as a traumatic myositis over the lower cervical and upper dorsal para-spinal muscles and traumatic neuritis of the lower cervical and upper dorsal nerves bilaterally (an inflammation of muscles and nerves of the back).

A decision and award in favor of the claimant were affirmed.

(Pioli vs. Crouse-Hinds Co.: New York Supreme Court, Appellate Division Third Judicial Department. No. 314–20. Decided December 30, 1952.)

Chemical Fumes Caused Loss of Sense of Taste and Smell

Mr. Ford was employed by a mining company, the Nellie B. Mining Company. In the course of his employment, he sustained an accidental injury consisting of inhaling xanthate fumes and, as a result of

New Soap Keeps Hands Germ-Free

REDUCES ABSENTEEISM

Now management can insure better health and less absence by the use of medicated soap. It looks and is used like any other soap—but what a difference Powdered Germa-Medica can make! Science has made great strides in the development of antiseptic soap which kills the contagious disease germs causing colds, flu, skin infections and other diseases which often disable employees. Hexachlorophene is the amazing new antiseptic—the first successfully incorporated in soap. Daily use gives positive protection removing up to 97% of all harmful germs. Best of all, regular use of Powdered Germa-Medica with Hexachlorophene deposits a microscopic health-protecting film of antiseptic on the skin which is always on guard against disease. Place Powdered Germa-Medica in your regular washroom soap dispensers for daily use—no other medication is needed. It's that simple to start this practical health program in your plant. It'll bring you important savings by reducing lost man-hours.

TESTS PROVE BENEFITS TO INDUSTRY

Clinical tests have shown the power of Hexachlorophene to degerm the skin, preventing the spread of disease from worker to worker. Actual use has proved the benefits of Powdered Germa-Medica in food processing plants by helping prevent the transfer of germs from person to person. Tests show that Powdered Germa-Medica will not irritate the skin. It will help to correct acne and other skin infections.

STOPS DERMATITIS AT ITS SOURCE

Where hands are contact with oils, Powd Germa-M an excel preven de

Available in liquid form, accepted by the Council on Pharmacy and Chemistry, American Medical Assn.

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A PRODUCT OF HUNTINGTON LABORATORIES, INC.

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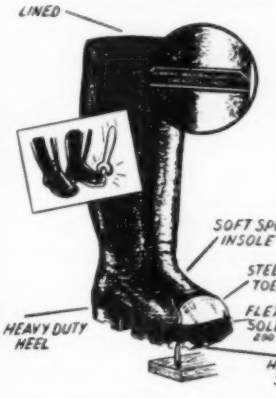

Another SCIENTIFIC INDUSTRIAL Safety Suggestion!

FLEXIBLE STEEL INSOLE SAFETY BOOT

Note the special safety features of this boot . . . designed for rugged use under wet working conditions. Sizes 6 to 13. Available in Plain Toe Knee Boot and Steel Toe Safety Boot.

ONLY ONE ITEM IN THIS COMPLETE LINE

Asbestos Gloves	Rubber Boots
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2958 S. Vernon Ave., Chicago 16, Ill.

See Us at the National Safety Congress

(For further details, use Key # K-27 on free Inquiry Card on page 117)

the accident, he lost his sense of taste and smell. Although there is no statute definitely fixing compensation for loss of taste and smell resulting from an accident, such an injury is compensable under the "other cases" provision of the statute. Under that section compensation is recoverable for all classes of injury resulting from hazardous employment other than such injuries for which specific compensation is provided. It was not necessary for the claimant to prove that he had sustained a loss of earning capacity.

As a result of his injury, Mr. Ford, according to medical testimony has sustained a 10% permanent partial disability to his body as a whole. The Commission should have made a finding as to this issue. Order vacated for further proceedings.

(Ford vs. Nellie B. Mining Company: Oklahoma Supreme Court, No. 35, 596. Argued March 17, 1953.)

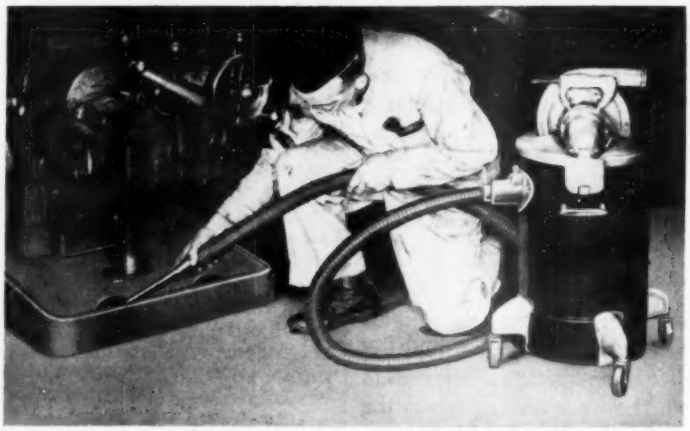
Plant Maintenance Show Proceedings Published

"TECHNIQUES of Plant Maintenance—1953," published by Clapp & Poliak, Inc., who established the Plant Maintenance & Engineering Conference, contains the text of 61 sessions on various aspects of maintenance and plant engineering held at the conference in Cleveland in January.

More than 2,200 production and maintenance men attended the conference. Their questions and discussions on maintenance problems are available in the book, which contains 288 pages. It is sent without charge to those who attended the conference. It is also available postpaid for six dollars from Clapp & Poliak, Inc., 341 Madison Ave., New York 17.

Highlight is the publication of 859 questions and answers at the general and sectional conferences. Other questions and discussions, submitted at the 21 roundtables, are summarized in narrative style. Also included are texts of 20 papers read. Illustrations include 41 charts.

"SAFETY MAINTENANCE" Salutes a Safety Idea



Vacuum Fine Cleaner For Machine Tool Sumps

HERE'S a way to make short work out of the ordinarily messy and difficult job of cleaning out machine tool coolant reservoirs. The Dukes Company in Chicago uses a vacuum cleaner to clean out sumps on milling machines, turret lathes, grinders and screw machines.

A job that used to take the better part of an hour is now done in a matter of minutes. The maintenance man is spared the task of scraping out the coolant tank by hand. Long accessory tools easily reach into the most inaccessible places—and inaccessible is the word for most machine tool sumps!

After removing most of the cutting oil or coolant solution, the accumulation of oil, water, dirt and chips that settles in the tank is sucked out by powerful vacuum action. Since no conversion is required for wet or dry pickup on this particular vacuum cleaner it can be used to clean chips off the machine and dirt off the floor immediately afterward.

Picture by courtesy of Breuer Electric Mfg. Co.

Safety Data on H_2O_2

A NEW safety data sheet on hydrogen peroxide, a chemical widely used in the bleaching of pulp and textiles, has been published by the Manufacturing Chemists' Association. Chemical safety data sheet SD–53 gives properties and information for the safe handling, storage and use of hydrogen peroxide.

Hydrogen peroxide water solutions containing more than 8 percent hydrogen peroxide by weight are classified as corrosive liquids by the Interstate Commerce Commission. Because hydrogen peroxide is a strong oxidant under certain conditions, it may cause spontaneous combustion. Complete recommendations for safety procedures to be followed in unloading, storing, handling and waste disposal are given in the safety data sheet. A section on health hazards and their control outlines proper personal protective equipment and first measures in the event of contact with skin and eyes.

Copies of SD–53, Hydrogen Peroxide, may be obtained from the Manufacturing Chemists' Association, 246 Woodward Building, Washington 5, D. C., at 25 cents each.

Here Are Safety Shoes That Workers Like To Wear!

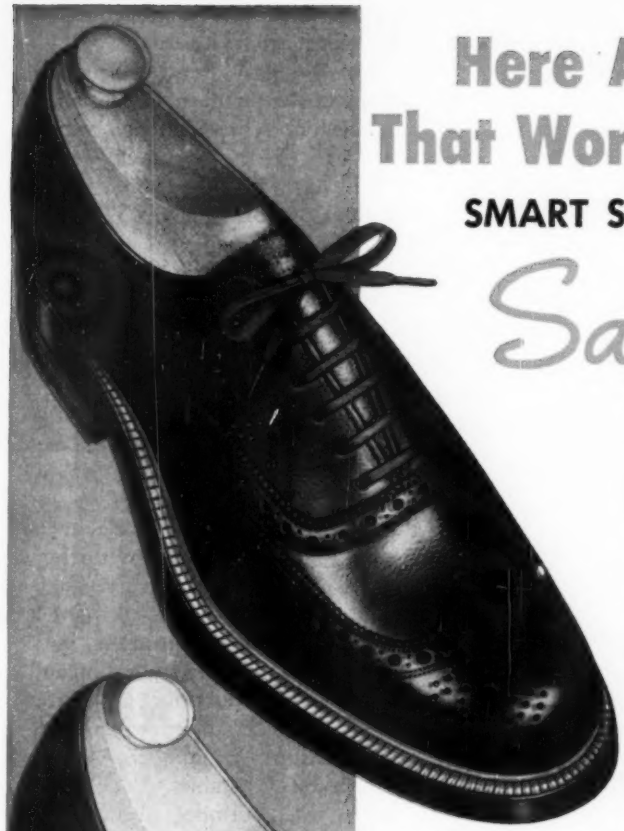
SMART SAFETY SHOES STYLED BY

Safety First

It's easier to promote foot safety with these good-looking Safety First shoe styles. Employees have greater incentive to buy work shoes that double as dress shoes too! Air cushion innersoles of foam latex give exceptional comfort!

Yet, with all their smart styling and comfortable fit, Safety First shoes are ruggedly built for long wear and sure foot safety. Every pair meets the high standards of craftsmanship always maintained by Safety First—the originator of steel toe footwear.

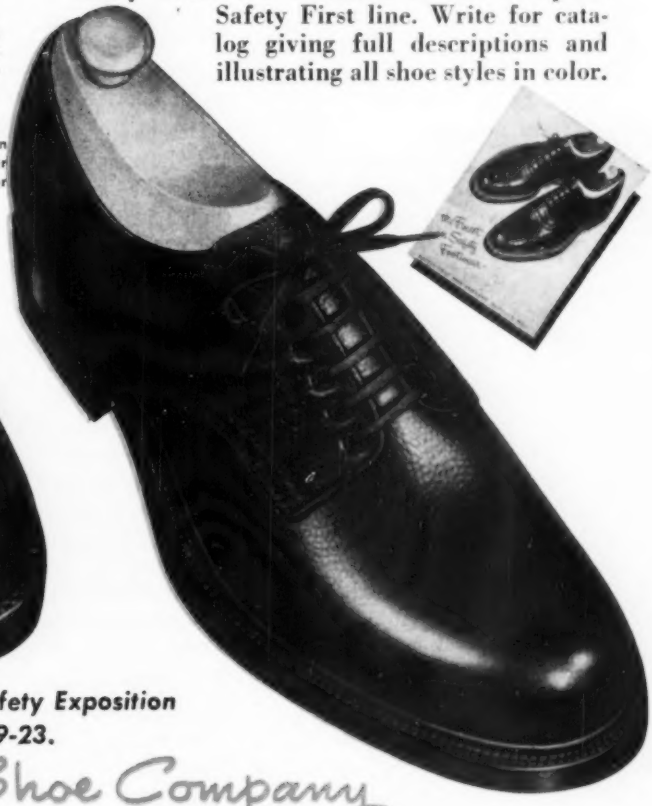
In addition to "dress" shoes, many "work" safety shoes are included in the complete Safety First line. Write for catalog giving full descriptions and illustrating all shoe styles in color.



STYLE 5180
Tan scotch grain wing tip brogue oxford. Leather sole.

STYLE 5185
Tan scotch grain plain toe blucher oxford. Leather sole.

STYLE 5647
Burgandy dress oxford, moccasin style. Neo-Crepe sole, oil and acid resistant.



See all shoe styles at BOOTH 57, National Safety Exposition Oct. 19-23.

LOOK OUT FOR PROTECTION — SAFETY FIRST SHOES

Safety First Shoe Company

26 WATER STREET, HOLLISTON 5, MASSACHUSETTS

THE PIONEER MANUFACTURERS OF SAFETY SHOES

(For further details, use Key # K-28 on free Inquiry Card on page 117)

The glass fiber insulation, for sound deadening, is folded in half before it is pushed up through the opening in the ceiling.

Acoustical Insulation Doubles As Thermal Insulation

ALUMINUM Company of America's new 30-story skyscraper in Pittsburgh boasts many new "firsts" in engineering, design and use of new materials.

Among the "firsts" is the initial large-scale use of glass fiber insulation for acoustical purposes, a material which heretofore has been principally used as thermal insulation.

In the Alcoa building, 250,000 square feet of the material was used to soundproof the ceilings and the insides of air ducts. Faced on one side with a vinyl spray coating, it was used in the ceilings at a weight of only two pounds per cubic foot. A slightly heavier glass fiber insulation was used to deaden fan noises and other sounds caried through the duct system.

Besides being soundproofed, the Alcoa Building ceilings have another unique feature in that they house the radiant heating and cooling panels that heat and air condition the building. By placing this equipment in the ceilings, instead of along the outside walls, the architects were able to save approximately 15,000 square feet of rentable floor area, or the equivalent of one and a half floors of the building.

Design and operation of the radiant heating and cooling system marks the first of its type to be installed in this country. It involves the use of .040 inches thick aluminum sheet panels used as a finished ceiling. These panels are perforated for acoustical treatment.

Above them is a grid of half-inch diameter aluminum tubing, installed in one-foot centers through which hot or cold water is circulated. Grids have been prefabricated in sections, approximately six by twelve feet.

A three-quarter-inch glass fiber insulation blanket, laid over the coils of aluminum tubing, absorbs sound passing through the perforated holes in the sheet. The heating and cooling system is designed to handle all winter heating arrangements and will also provide 50 per cent of the summertime cooling needs.

Made from long-length glass fibers bonded together with a thermosetting resin, the glass fiber insulation was chosen because of its high sound absorption qualities, light weight, low moisture absorption and fire resistant qualities. It is also rotproof and resists odors, vermin, rodents and corrosion. Because it is dimensionally stable, it will not settle, sag or disintegrate under vibration.

The product was also found to be easy to handle and cut, and its flexibility permitted application around curves and corners without special fitting. The material can be firmly fastened in place with adhesives, wires, metal screws and washers or even staples.

Picture by courtesy of Gustin-Bacon Mfg. Co.

Plant Maintenance Show Moves to Chicago in '54

THE Plant Maintenance Show, held for the past 4 years in the East, will move to Chicago for the 1954 exposition. At the same time it has been announced by Clapp & Poliak, Inc., sponsors of the exposition, that the name will be changed to the Plant Maintenance & Engineering Show.

The exposition will take place at the International Amphitheatre, January 25th to 28th, inclusive. Concurrently with the show, the Plant Maintenance & Engineering Conference will be held at the Hotel Conrad Hilton. The Chicago exhibit will cover more than 100,000 square feet, six times the size of the first show, held in 1950.

In explaining the change of name, Saul Poliak, managing director, says, "The maintenance function has grown so important that it is no longer possible to separate it from other plant engineering functions . . . the science has grown until it is now recognized as an integral part of plant construction, layout, power and production."

Advance registration cards may be obtained from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

IF YOU THINK ALL FIRST AID KITS ARE ALIKE -WE'VE GOT NEWS FOR YOU!

LET'S BE FRANK about it . . . First Aid Kits haven't shown the continuing improvement recorded by other items of safety equipment . . . so we did something about it!

We "put the finger" on every place where modern design, latest quality control, color keying, and improved manufacturing techniques could produce BETTER First Aid Kits.

Then we MADE these improvements. Many of the changes are small in themselves, but they add up to a BIG DIFFERENCE. Let us prove we have something BETTER—something you don't want to miss!

NEW PRODUCT PROTECTION . . . added Quality Control Methods give you Pharmaceutical thoroughness

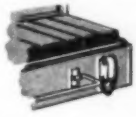
To assure purity, freshness, sterility, every Unit "D" box "signs-in" and is permanently stamped with a number. This Quality Control number means unit responsibility, covering every operation.

Sterilization gets the full treatment! All compresses and dressings are sterilized *in their Unit "D" boxes.* A recording thermometer and a tell-tale glass vial that rides with every batch confirm temperature, exposure and penetration of purifying steam. The chart and vial are numbered and filed. This number is stamped on every box in the batch . . . another step in our program of improved, responsible protection for *you.*

THE NEW LOOK . . . a dressing-up that pays off in convenience, use!

Even the color is NEW. New blue gives the case and Unit "D" boxes a clean, distinctive appearance. Hard wearing surface of baked enamel on the case resists grease, dust. New, simplified illustrated instructions on many Unit "D" boxes aid user. Our labeling meets latest requirements of the U. S. Pharmacopeia and Food and Drug Administration.

THE CASE with the built-in extras



No overlapping lid to complicate handling, storage. Unit "D" boxes extend free of the base, give "finger-room" for quick removal of any package. Tubular rubber gasket sits securely in strong metal channel in base, adds extra pressure, more contact surface when lid is closed. Truly an "M.S.A. All-Weather" feature. The wall-mounting brackets are positioned in center of kit for better balance, support.

FIRST AID MATERIAL Features

M.S.A. Visual Swabs have *gauze tips* which are less absorbent to assure full utilization of antiseptic and no loose fibers to catch on tissues. Color keying of labeling assures positive, quick identification.

Ammonia Inhalants contain pure, uncolored solution. They are wrapped in special treated covering that turns brown in case of leakage. A two-week test period is maintained before final packaging.

You'll find "extras" in our Ammonia Ampoules, too. "Color-Break" line on the glass vial gives clean, quick break. Labeling is printed on both the protective sleeve, and the glass vial for identification and as a precaution against misuse should the sleeve be lost.

AND THERE'S MORE, LOTS MORE. Complete size and style selection from more than 70 different items . . . this BIG NEWS applies to all sizes . . . 10, 16, 24, and 36-Unit Kits! But seeing is believing . . . so call your M.S.A. man NOW.

SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES COMPANY
201 North Braddock Avenue, Pittsburgh 8, Pa.
At Your Service: 76 Branch Offices in the United States

MINE SAFETY APPLIANCES CO. OF CANADA, LIMITED
Toronto, Montreal, Calgary, Edmonton, Winnipeg, Vancouver, New Glasgow, N. S.
Representatives in Principal Cities in Mexico, Central and South America
Cable Address: "MINSAF" Pittsburgh

Call the M.S.A. man on your every safety problem . . . his job is to help you

(For further details, use Key # K-29 on free Inquiry Card on page 117

ENTHUSIASM

...INSTEAD OF Tolerance

By using imagination you can make safety attractive... vivid... interesting... and show each worker clearly how safety benefits him. And you have his enthusiastic cooperation—not mere tolerance.

YOUR
Safety News
PUBLISHED IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
Why Your Safety Means So Much
in Big Plants
& Small
Let's put it this way: Assume that an average workman has a wife and two children and during a year's time each member of the family has an accident, such as a bad fall, cut, burned fingers or any injury that would prevent normal activity for a day or so. This might not seem too bad. But suppose in a plant of 10,000 workmen, each employee has a lost time accident. That would mean 10,000 injuries in one year! WOW!
Small plants SEEM to have so few accidents that many of them do not even figure their rate. If they did, the chances are they would get a big surprise, for the accident rate of small plants may be higher than for big plants. It doesn't matter what size plant we have—safety requires the cooperation of everyone for his own good.
As we see it:
Play it safe wherever you are.
John Doe

Size 5½" wide × 8½" deep

...talks the worker's language!

Full of color, pictures, humor and snap, it makes safety interesting and down-to-earth. 12 times a year it covers every accident hazard. Nationwide, leading industrial firms state it's the *only safety paper their employees will read* . . . and take home to their families.

It gives you the advantages of personal contact, saving time and money. When it prevents one Lost Time accident, it has more than paid its cost for the year. Try it . . . it works!

Your Imprint Here!

makes YOUR SAFETY NEWS your own publication . . . a good-will ambassador . . . another force for better industrial relations.

Every employee feels bucked-up by a note from the boss. If you desire, your facsimile signature can be printed here.

Your Signature Here

NOTE:
Nothing of a controversial nature that might offend or embarrass either management or labor is ever published in YOUR SAFETY NEWS!

INSIDE PAGES
(pages 2 and 3)

IN YOUR EMPLOYEE'S INTEREST

Your employee's self interest in his own safety is always emphasized. Even household hazards are covered to keep him safety-conscious every minute, not only in the plant, but at home and on the way to work.

CHOCK-FULL OF ILLUSTRATIONS

Artwork is carefully chosen to lodge home each point. The cartoon style makes YOUR SAFETY NEWS as familiar and as welcome as the Sunday supplement.

THE "FOLKSY" APPROACH

Keeping the contents folksy, adding the grace note of humor, delivers your safety message with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of tolerance.

VIVID COLOR

Generous use of color gives sparkle, adds to the attention-riveting qualities of YOUR SAFETY NEWS. Each issue is as lively as any news-stand favorite.

HOW TO ORDER

YOUR SAFETY NEWS may be ordered with either the Standard imprint or with your Own Special Imprint. The Standard Imprint reads PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . . A SAFE WORKER.

You can personalize YOUR SAFETY NEWS with the name of your firm and the name or facsimile signature of a company representative as illustrated. Give full instructions for your Special Imprint on the order blank below.

Item (1) FIRM NAME. Please show the name of your firm exactly as it is to appear.

Item (2) INDIVIDUAL NAME OR SIGNATURE, if desired. In the large space provided, please show, in black ink, the individual name or signature, if desired, which is to appear each month on the first page of YOUR SAFETY NEWS.

NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

Clip Out & MAIL TODAY!

ALFRED M. BEST COMPANY, Inc. • 75 Fulton Street, New York 38, N. Y.

Gentlemen:

Until further advised, please publish for us each month..... copies of YOUR SAFETY NEWS at .....¢ each.

☐ **Special Imprint** ☐ **Standard Imprint**

Item (1) — Our Special Imprint should appear as follows:

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Item (2) — (if desired) — Please imprint the name or signature shown below, or the following:

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INVOICE TO:

Name_____

Firm Name_____

Address_____

City_____ **Zone**____ **State**_____

PRICES

Per Month	Your Special Imprint	Standard Imprint
6,001 copies and over	2½¢ each	2¢ each
3,001 to 6,000 copies	3¢ each	2½¢ each
1,001 to 3,000 copies	3½¢ each	3¢ each
501 to 1,000 copies	4½¢ each	4¢ each
200 to 500 copies	5½¢ each	4½¢ each
100 to 199 copies	6½¢ each	5¢ each
25 to 99 copies	*	5½¢ each

*5½¢ each plus $3.00 per month for Special Imprint F.O.B. New York, N. Y.

Unloading Dock Cuts Materials Handling Cost

Lift truck operator waits with load as helper fits loading ramp to floor of trailer truck. Steel dockboard is moved easily by hand to proper vehicle height.

THE problem of daily transporting incoming material across the busy Lincoln Highway from one part of The Autocar Company to the other has been virtually eliminated by the erection of a new unloading dock.

The dock not only solves the traffic problem but erases a safety hazard, speeds up production, and reduces the company's materials handling costs.

The new unloading dock can accommodate 2 over-the-road tractor trailer vehicles at the same time. A concrete floor slopes back from pavement level so that the floor of the trailer winds up just about flush with a 26-inch high platform. There are two loading and unloading dockboards, one on each side of the dock. Each is an 8-foot wide platform with a floor of ¼-inch steel and a 6-inch movable leaf of the same material on the front end. To permit fork lift trucks to ride smoothly onto vehicles of any height, the whole dockboard can be raised or lowered by a hand lever like an automobile hand brake.

Though the dockboards weigh 1200 pounds, they are easily moved by a pulley and counterbalance arrangement using an 842 pound weight. Both of the dockboards can comfortably accommodate loads up to 8000 pounds. The whole dock, surrounded with a 3-foot cable fence for safety, can park long tractor trailer units without having any part of the vehicle extending over the sidewalk at its entrance.

When ordering supplies for the assembly line, tire shop, cab assembly units and other departments on the south side of the highway, the company specifies delivery on the south dock. Other materials—for the gear shops, machine shops, receiving and shipping department—are delivered at the regular receiving department on the north side of the highway.

Safety-Wax Research

WAYS and means of reducing accidents among the 145,000 federal employees who work in the more than 8,200,000 square feet of floor space occupied by federal agencies in the New York City area have been outlined to the New York City Federal Safety Council by Regional Director Walter F. Downey of the General Services Administration. Mr. Downey reviewed the overall safety inspection and hazard elimination program of the government's housekeeping agency in a talk on "The GSA's Contributions To Safety" to representatives of 41 federal agencies attending a luncheon meeting at the Coast Guard Base, Pier 9, East River.

Stressing that the 4,500,000 square feet leased and the 3,720,000 square feet owned by the government in New York City represents a hazardous area of accident potential, Downey summarized what GSA is doing to prevent accidents involving either federal workers or the 36,000 transients who daily visit offices or installations under GSA building management in this area.

A special safety-wax research program which Downey said his agency has nearly completed will reduce accidents to federal employees, 98,728 of whom were injured in 1952 In addition the program will cut the maintenance and labor costs of protecting floors in government installations by as much as 50 percent. Downey described the project as a major GSA contribution to safety.

The safety-wax program was initiated, he explained, after numerous complaints on the expense of maintenance, the unsatisfactory quality and the high accident rate resulting from some inferior and hazardous waxes used in government buildings and hospitals.

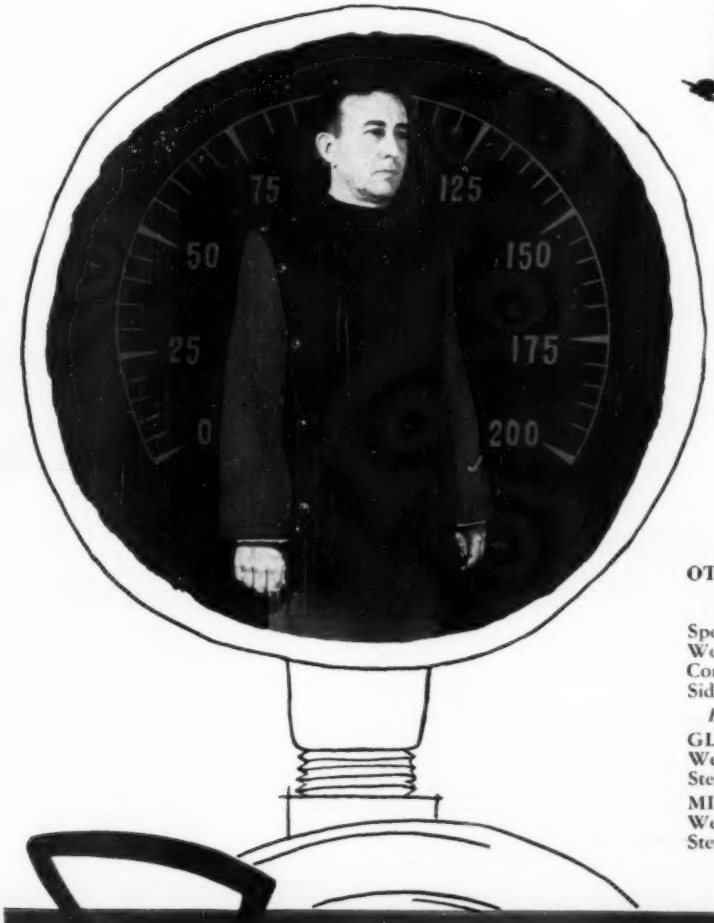
Slipping on floors, work surfaces and aisleways caused 11.7 percent of the falls and accidents on stairways and steps caused 17.8 percent more, according to the Bureau of Employees Compensation of the U. S. Dept. of Labor.

The research project to develop an accident-proof floor wax was started in the New York Regional Office of GSA after the project was approved by the Standards Division of the national office. In May of 1952 cooperating committees of government agencies were set up in 5 floor-test areas in New York, Chicago, Washington, Denver and San Francisco. Waxes were applied for 4 to 6 week periods to small test areas on the floors of government installations. Results were checked weekly for slip-resistance, tackiness, scuff, buffability and general wear.

(Continued on page 66)

Aluminized

WOOL PATCHES ON COATS BY KIMBALL GIVE ADDED PROTECTION



Kimball's new woolen Coats with side button opening for greater safety — Aluminized wool patches which reflect away intense heat and insure longer fabric life with greater wearing comfort, are the latest additions to the Kimball Safety Clothing Line.

The Aluminized patches can be placed anywhere to suit the purchaser. These coats come in all sizes.

Olive Drab: 18 oz. serge, 20 oz. Melton, 32 oz. Melton.

Navy Blue: 20 oz. Melton.

OTHER KIMBALL SAFETY PRODUCTS

Eye Protection:

Spectacle Goggles, Welding Goggles, Composition Goggles, Sideshields.

Hand Protection:

GLOVES: Welder's, Asbestos, Steel Stitched.

MITTENS: Welder's, Asbestos, Steel Stitched.

Body Protection:

CLOTHING: Wool, Flameproofed Cotton.

LEGGINS & SPATS: Leather, Asbestos, Flameproofed Cotton.

APRONS: Leather, Asbestos, Flameproofed Cotton.

Kimball

SAFETY PRODUCTS COMPANY

9310 WADE PARK AVENUE
CLEVELAND 6, OHIO

(For further details, use Key # K-30 on free Inquiry Card on page 117)

heading the safety parade!

McDONALD SAFE-T-HAT

Worn by more workers than any other safety hat! Tougher, radial-ribbed crown —fully suspended aluminum shell in two sizes.

McDONALD DUSTFOE No. 55 RESPIRATOR

Captures harmful dusts by new electrostatic principle. Weighs less than 3 oz. complete.

SEE OUR BOOTHS 61 & 62

NATIONAL SAFETY CONGRESS

B.F. McDONALD CO.

McDONALD PROTECTIVEST

Protects against flying metal particles shot from high speed milling and cutting machines. Stops a .38 caliber bullet fired at only 8 feet. Light (less than 3 lbs.) and only ¼" thick—made of laminated glass-cloth.

SAFETY GOGGLES

A complete line of quality goggles, precision-made and sturdily built for maximum vision security.

McDONALD DOG BITE KIT

Emergency first aid treatment for utility workers, meter readers, etc. Plastic kit contains plastic bottles of liquid soap and antiseptic, sponge, adhesive bandages, instructions.

McDONALD SAFETY BOOT AND INSOLE

Twice the foot safety! This fine rubber boot has rugged built-in steel toe—plus—flexible insole of overlapping steel strips.

McDONALD FIRST AID KITS

All sizes, all types. Kanister Kit (left) mounts anywhere, ideal for outdoor use. Unit Kit (right) available with 10, 16, 24, or 36 complete first-aid treatments.

McDONALD AIR SUPPLIED HOOD

Safety no smart worker does without! Three rugged, full-vision models give protection against harmful dusts, shot and grit, lead fumes. Foolproof air volume control.

WHO'S HICKEY?

Be sure to see him at our

BOOTHS 61 & 62

Recorder Plus Dummy Help Reduce Accidents

A LIFE-SIZED dummy dressed in a worker's uniform and a small tape-recorder which repeats messages recorded on it are being used by the Griesedieck Brewery of St. Louis in a successful program of accident-reduction.

As Robert A. Griesedieck, of the brewing firm, explains the setup: "The surprise impact is always the greatest. We have a dummy, dressed as one of our men, placed in the department of our last accident. We try to place it in the same area and position as the accident, and then we make a tape recording on the message repeater pertaining to this accident. The recorder is wired and hidden near the dummy. When the men come to work they see the dummy, are curious and gather around. A floor mat switch is near the dummy, and the message is set off whenever the mat is stepped on. This type of accident recognition is strong and alive. It leaves a sense of collective enjoyment as well as a cold realization in the men for the entire day. The individual men tell their fellow employees in other departments—and that is what helps stop accidents. When men stop talking safety, laxness begins.

"It even helps to use odd, foolish or funny methods in order to promote thinking among the men. The unusual attracts first. When there are no accidents," continues Mr. Griesedieck, "we still use the recorder-dummy combination. For example: We felt the need to caution the men about eye protection. I set the dummy in a chair beside one department's time clock. I placed bandages over its eyes and made a tape recording about blindness and eye injury. The mat switch was placed at the time clock area and the job was done. The men not only heard my message when they clocked in and out, but they would step and re-step on the mat to hear the message several times before they would leave. All of this was new to them. Maybe the surprise of hearing my voice, or working the mat switch —or the combination attracted them.

"Separate use of the recorder is sometimes as dramatic if hidden. Our drayage department had several avoidable accidents due to 'horseplay.' For 3 consecutive days, I ran 3 different tapes on 'horseplay' and the messages really struck home. The repeater was hidden in the room where the men receive their daily orders and one man periodically turned it on. So close was the message to each man that soon each one was telling our supervisor that he hadn't been in on the 'horseplay.' They were all conscious of the fact that we knew what was going on—and there has been no horseplay since."

In using the recording device, Mr. Griesedieck adds, it is important to avoid monotony, by changing the message daily.

Employee-Run Program Pays off with Safety

A REVITALIZED safety program instituted a year ago at the Hobbs Manufacturing Company's Fort Worth plant, in which safety became an employee rather than a management project, paid a rich dividend this summer.

For the first time in the company's 28-year history there was no lost-time injury for an entire calendar month. In fact, the 250 employees went 2 full months without a lost-time accident.

The movement and handling of sheet steel and fabricated parts, wheels and axles and other heavy equipment made by the company, manufacturer of truck bodies and trailers, poses a difficult safety problem. The use of huge 700-ton brakes for punching, pressing and shaping sheet steel as well as constant welding and riveting present additional hazards to employees.

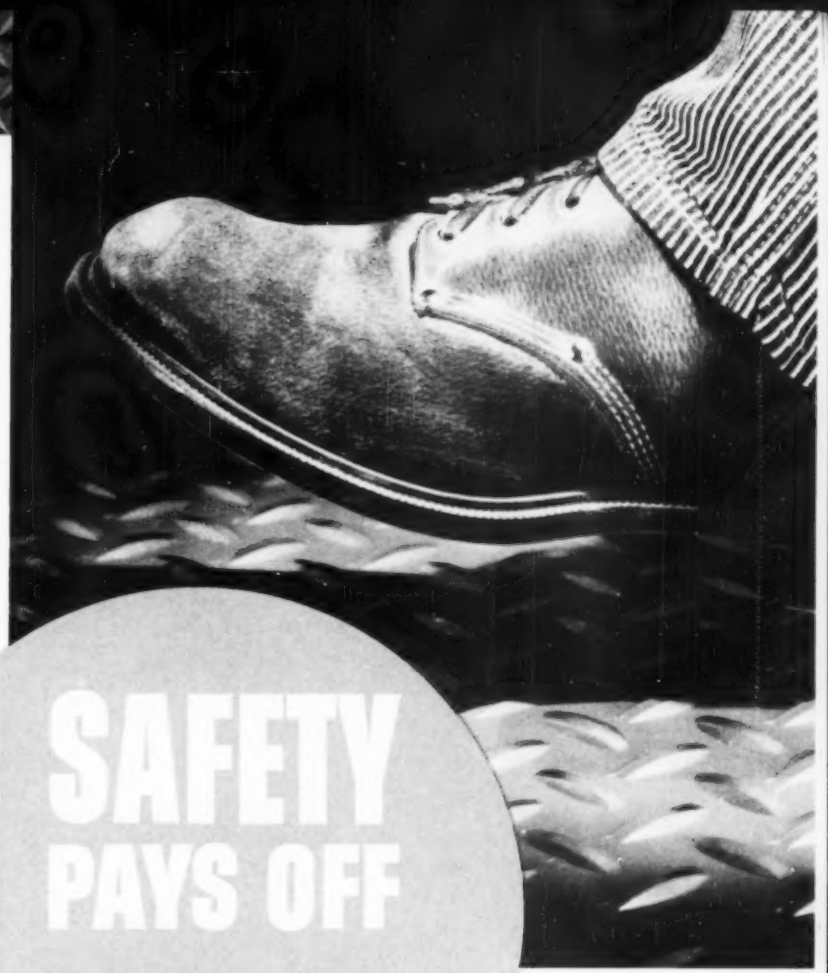
Last year, in an effort to halt the increasing incidence of accidents, a new safety-awareness program was placed in operation. The new feature was a radical one: production line employees were made responsible for safety. In the past, plant supervisory personnel had composed the safety committee. Under the new program the safety committee became an employee group; each department in the production plant was represented; membership on the committee rotated every 2 months.

The program paid quick returns: an employee reticent in reporting what he considered a safety hazard to a supervisor for fear of being labelled a griper, had no qualms about calling it to the attention of a member of the new safety committee, a fellow employee. For example, a man operating a chain hoist told a safety committee member he thought the brake on his hoist defective. Promptly reported by the committee member, the suspicion was investigated, the brake found defective and a new one immediately installed.

The safety committee meets with the plant safety director one morning each week and makes recommendations for improving the overall safety situation. In addition, accidents of the previous week are discussed and analyzed and remedies are suggested to prevent their recurrence. Members are also given an intensive course in first aid, fire-fighting and general accident prevention during their 2 months on the committee.

The accident that broke the 2 month "accidentless" stretch occurred when a man's arm was caught between a bolster and a trailer. The arm was lacerated, but 2 days later the employee was back on the job. The safety committee immediately took steps to prevent an accident like this from happening again.

As a further inducement toward safety consciousness, a competition has been set up between departments. Each month the department with the best safety record gains possession of a trophy which it can retain only as long as it holds top position. Safety at the plant has become an active and lively topic . . . not just another management project to be taken with a grain of salt or not taken at all.



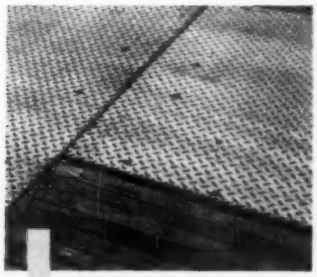
SAFETY PAYS OFF

- Save Man Hours
- Pay Lower Insurance Rates
- Enjoy Better Fire Protection
- Have Happier Employees

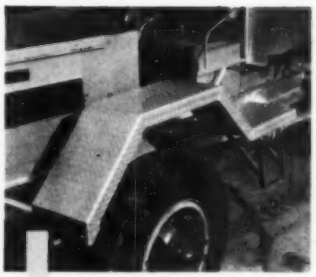
with Industries' first choice of safety flooring-

INLAND

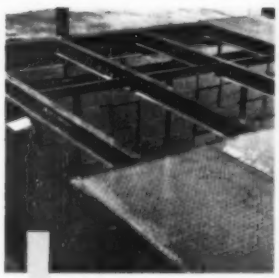
4-WAY® safety plate



for replacement



on new equipment



in construction

4-WAY® safety plate

firesafe

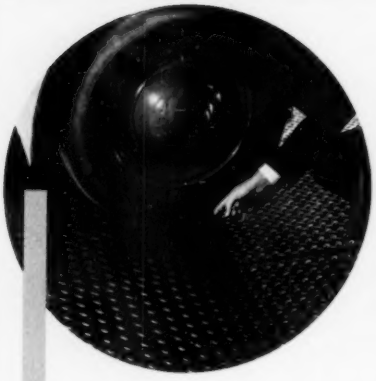
4-WAY is popular as a safety flooring in plants and for product use where fire hazards are a problem. Resists intense heat and shock with ease. Eliminates fire risk, reduces insurance costs.

attractive

Popular demand for 4-WAY also results from its attractive appearance, eye-pleasing design. Pattern is uniform in all directions, pieces are easily matched. Looks good even after years of service.

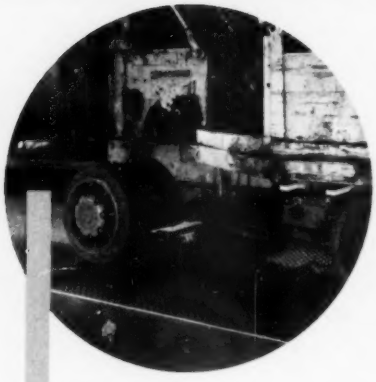
economical

You'll be floored by 4-WAY's low cost! Initial cost is competitive with other flooring materials, installation cost may be less. Repair cost is practically eliminated. Maintenance is trouble-free.



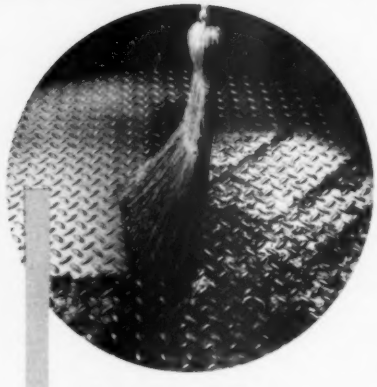
safe

Specially designed raise-lug pattern provides dependable all-weather traction for men and vehicles. STOPS and starts are made quickly, safely—*before* accidents get a foothold.



strong

Rough abuse and heavy loads are taken in stride by this tough, tried and proved steel plate. Made of finest rolled open hearth steel. Withstands great stresses.



cleans easily

Where cleanliness and sanitation are prime factors of importance, 4-WAY provides sanitary flooring with no dirt-catchers. Liquids drain away freely, are not absorbed. (Chemical resistant.) Won't splinter, chip or crack.

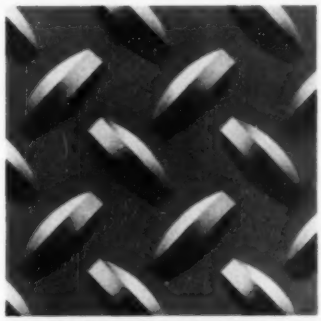
there's a 4-WAY® safety plate size and pattern

TO FIT YOUR NEEDS

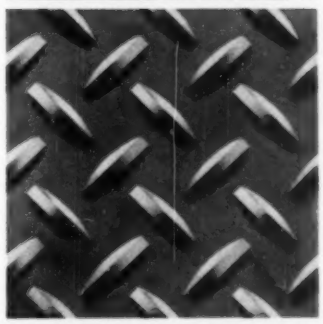
Can be . . . Flame Cut • Sheared • Sawed • Drilled and Punched • Welded • Formed • Spot Welded

Goes down fast and flat, fits snug with a minimum of preparation. You have a safe floor surface ready for instant use.

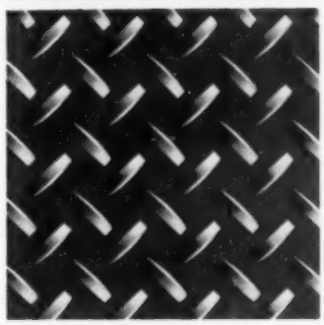
Easy to fabricate and maintain—with the strength found only in steel. These and other advantages make 4-WAY the outstanding choice of industry. See how safety pays off when you use Inland 4-WAY safety plate.



LARGE PATTERN
recommended for floors that must withstand tough abuse and heavy loads



MEDIUM PATTERN
the most popular and most versatile pattern for use in your plant or on your product



SMALL PATTERN
for applications requiring weight reduction or severe forming

(One-half actual size)

easy to fabricate

4-WAY can be fabricated by any of the conventional processes used on carbon steel plates. On-the-spot cutting, drilling or burning is readily accomplished with standard equipment.

MAIL for more information

CLIP THIS COUPON

INLAND STEEL COMPANY
38 South Dearborn Street
Chicago 3, Illinois

Gentlemen:

Please furnish me with the following information on 4-WAY safety plate:

☐ Catalog ☐ Availability and ordering information

Name_____ Title_____

Firm_____

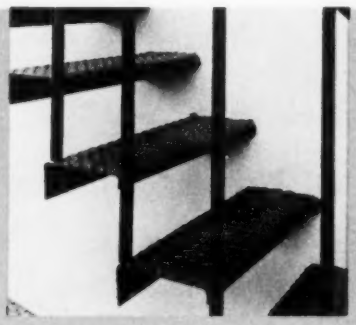
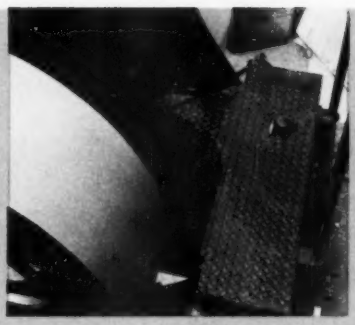
Address_____

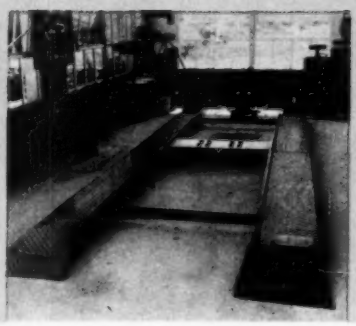
City_____ Zone_____ State_____

A B C D E

Inland 4-WAY® safety plate

PROVED IN USE



Actual use under the most trying conditions has proved Inland 4-WAY the versatile answer to flooring problems. Rugged, long lasting, it combines safety, strength, fire resistance and ease of maintenance all rolled into one. See for yourself how 4-WAY can safeguard you best and save you more. Send for the catalog that tells the complete 4-WAY story.

Stocked by leading steel warehouses throughout the U.S.A. and Canada

INLAND STEEL COMPANY

38 South Dearborn Street • Chicago 3, Illinois

Sales Offices: *Chicago, Milwaukee, St. Paul, Davenport, Kansas City, St. Louis, Indianapolis, Detroit, New York*

Biggest Safety Show Held In Chicago Oct. 19–23

THE biggest safety show on earth—the annual National Safety Congress and Exposition—will be held in Chicago, Oct. 19–23, when more than 12,000 persons from all over the world will hear 600 program participants at 200 sessions discuss all aspects of accident prevention.

Safety In All Fields

Safety personnel in all fields—industrial, traffic, farm, school and home—will discuss new information and techniques aimed at their specific problems. In the industrial field the program will include automotive and aircraft manufacture, metals, printing, petroleum, mining, food, construction, public utilities, wood products and others.

In addition, the American Society of Safety Engineers will sponsor sessions of general interest to men in all industries. Some of the topics will be nuclear energy, electronic testing, psychology of safety, machine guarding and protective equipment, research on safety, and safety training.

Human Accident Factors

Paul J. Mundie, industrial psychologist, will give a series of 4 "early morning" sessions designed to increase the safety man's personal effectiveness. These lectures, dealing with the human factors in the accident problem, will provide information on developing intellectual effectiveness, emotional maturity, and the art of handling others.

The 1953 exposition will feature the largest and most comprehensive display of accident prevention equipment to be seen anywhere. Products relating to health, first aid, sanitation and fire control also will be shown.

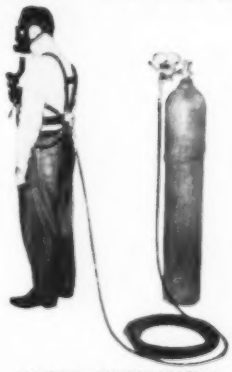
Sessions will be held at leading hotels, among them the Congress whose many meeting rooms will accommodate large groups simultaneously.

FRESH AIR AND SAFETY
right in the middle of
TOXIC WORKING AREAS!

PENNSALT
PROTECTS
ITS
WORKERS
with

Scott Air-Paks
(TRADE MARK)

Pennsalt's Safety Director writes: "We use Scott Air-Paks in our plants for worker protection on emergency jobs where men are exposed to chlorine, ammonia or acid gases. Much routine cleaning work requires the use of protective equipment for entering tank cars, rotary kilns, etc. The Scott self-contained equipment assures the wearer a source of air entirely independent of the surrounding atmosphere."



SCOTT EXTENSION HOSE ASSEMBLY

Here's safe, comfortable breathing of cool, fresh air for long periods of time, at considerable distances from air supply.

Why risk the lives of *your* employees and lose production in toxic areas when you can play it safe with Scott Air-Paks?

SCOTT SLING PAK

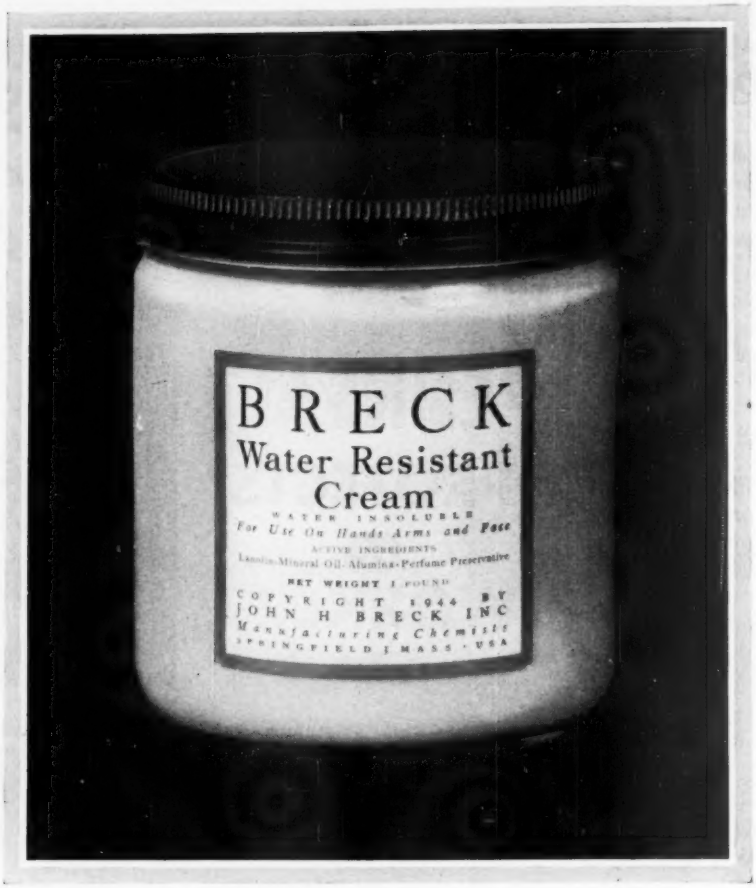
A quick, easy to use, lightweight Air-Pak for emergency jobs.

Call your Safety Equipment Dealer or write direct for complete information on Scott equipment and its use in industrial operations.

SINCE 1932 Scott FOR SAFETY - FOR SERVICE

SAFETY EQUIPMENT DIVISION
SCOTT AVIATION CORP.
217 Erie Street Lancaster, N. Y.
Canada: Safety Supply Co., Toronto — Branches in principal cities.
Export: Southern Oxygen Co., 157 Chambers Street, New York 7, N. Y.

(For further details, use Key # K-32 on free Inquiry Card on page 117)



B R E C K

WATER RESISTANT CREAM

Breck Water Resistant Cream, when applied to the skin, forms a protective film which is resistant to the action of water and water solutions. It spreads easily, leaving a protective film which is not slippery, sticky or "heavy". Breck Water Resistant Cream is recommended for the industrial and professional worker whose skin is frequently in contact with water or water solutions, such as liquid coolants, emulsified cutting oils, mist and spray from alkali baths and plating solutions, flux fumes, cement and lime. An application of Breck Water Resistant Cream is effective for three to four hours.

A Breck Industrial Preparations Booklet will be forwarded to you upon request.

JOHN H BRECK INC MANUFACTURING CHEMISTS · SPRINGFIELD 3 MASSACHUSETTS
NEW YORK · CHICAGO SAN FRANCISCO · OTTAWA CANADA

(For further details, use Key # K-33 on free Inquiry Card on page 117)

Associate Editor
Jacob A. Goldberg, A.M., Ph.D.

Treatment of Eye Injuries

AMERICAN industry has an "enormous stake in the prevention and treatment of eye injury and disease," according to Dr. H. Hillman Palmer, M.D. In an address at the annual sight-saving conference of the National Society for the Prevention of Blindness, Dr. Palmer, Chief of the Plant Health Section of Merck & Co., declared that eye protection of workers "requires eternal vigilance on the part of management, safety personnel and medical personnel, working as a team." He pointed out that the eye is one of the most delicate parts of the body, and that even a small scratch on the clear surface of the eye (cornea) may result in loss of sight. The scratch, the abrasion, the minor burn, the surface injury that all of us consider trival when they occur elsewhere on the body, may modify vision when the eye is involved, to an extent that can only be appreciated by those who work with individuals handicapped in this vital sense.

Chemical dusts, liquids or fumes affect the surface of the eye in a number of ways, and some chemicals are "capable of dissolving the transparent epithelium (surface) and penetrating the eye," he continued. The degree of injury determines the intensity of the healing process. The healing process, when marked, is associated with scar, and scar formation reduces vision. The purpose of treatment is to remove the offending agent before it can do harm, to minimize damage already produced, and to attempt to decrease the intensity of scar and adhesion formation during healing.

Immediate washing with plenty of cold water is the best first aid treatment for chemical eye injury, Dr. Palmer added. He pointed out that in the Merck plant location of water sources and their importance are impressed on all the men by supervision as a staff function. After immediate treatment, the employee is sent to the Plant Health Department, where washing of the eye is continued for 30 minutes or longer, using distilled water or saline solution. In order to discover the extent of damage, the eye is then examined under a filtered ultraviolet lamp.

Dr. Palmer reported that very good results in preventing blindness from chemical eye injuries were obtained with prompt medical treatment. "Of over 100 case visits in 1952 due to burns," he said, "only 1 could be said to have developed a scar bad enough to affect vision materially."

Data Sheet on Handling Sulfur Dioxide Safely

SAFETY measures for handling, loading, and unloading sulfur dioxide gas to avoid accidents are given in chemical safety data sheet SD–52, Sulfur Dioxide, published by the Manufacturing Chemists' Association.

The safety data sheet gives properties, information about shipping containers and precautions to observe in unloading cylinders and tank cars. Sulfur dioxide, which is classified by the ICC as a non-flammable compressed gas, is irritating to the throat and upper respiratory system. Contact with its liquid form will cause burns of the eyes and the skin. The Data Sheet recommends proper personal protective equipment and outlines first aid measures to be used in the event of contact with sulfur dioxide.

Copies of SD–52, Sulfur Dioxide, may be obtained from the Manufacturing Chemists' Association, 246 Woodward Building, Washington 5, D. C. at 25 cents a copy.

LAST year, less than one man-hour was lost due to industrial ailments for every 100,000 man-hours worked by employees of the Westinghouse Electric Corporation. The credit for this must go to the industrial hygiene engineers and physicians—the men and women who work constantly to eliminate health hazards. In these days of increased defense effort, almost every plant in America has found it advisable to employ a staff of these trained experts whose job it is to eliminate occupational sicknesses which may inflict reduced efficiency, lost man-hours, and drops in defense production. Their main function is to do away with any possible cause of employee illness. However, this job of eliminating the offending substance before it has a chance to do any damage is not an easy one since it may be invisible to the naked eye, or may take effect only on certain employees with an undiscovered allergy. Consequently, many methods of attack must be used, one of the most effective of which is the card-filing system.

Materials Index

The industrial hygiene operations staff at Westinghouse, which consists chiefly of laboratory technicians, chemists, engineers, and radioactivity specialists, maintains a card index of all the thousands of materials used by the company in manufacturing processes and personnel equipment. These indexed materials, which now number over 7000, are carefully scrutinized for evidence of toxic qualities or other properties which may be harmful to the workman. Everything from goggles and protective clothing to paint thinners, solvents, and types of steel is carefully catalogued after being checked by either the industrial hygiene laboratory of the company's material engineers. For example, if a new solvent is introduced, the material is analyzed in the laboratory for its potential toxic quality and, if it is shown to be irritating under certain conditions, that information is recorded and transmitted to all shop supervisors.

The hygiene laboratory studies all toxic processing materials, including soaps, hand creams, eye protection, etc. Some hand creams and soaps have been found to be irritating and some others have been found not to do a satisfactory job of cleaning the skin. By means of meters, chemical analyses, and plain scrubbing of dirty hands, the laboratory technicians have determined the percentage of scouring materials in the various soaps, their alkalinity, lathering qualities, water softening ability, and the presence of irritating substances. It was found that soaps differ widely, especially in amounts of scouring material; some contain as much as 45 percent, others as little as five percent. By selecting the proper soap, hygienists have substantially reduced skin irritations.

A principal threat to health, strange as it may seem, is the air, and hygienists constantly check it for harmful dusts. For this job, they use an electrostatic dust

ATMOSPHERE CONTROL DUST CONTROL: Pneumatic hose is used to suck up powdered ceramic materials from freight cars to large storage silos.

SLEUTHING

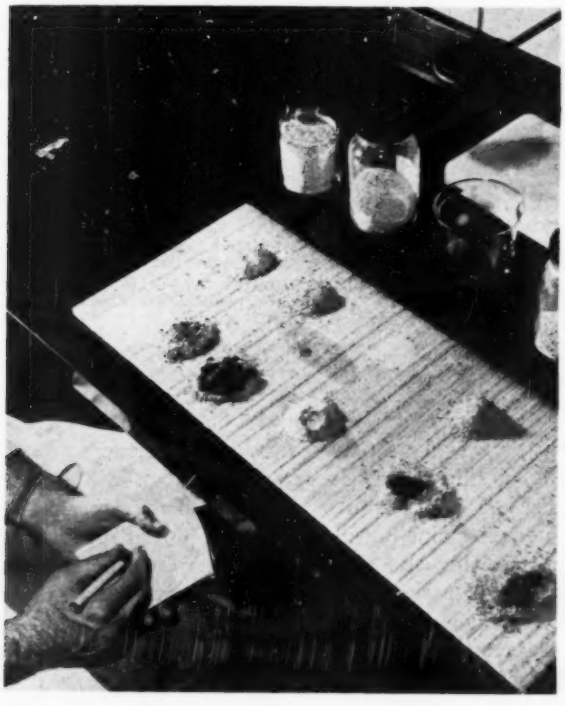
MATERIALS TESTING FLOOR WAX TESTER: This specially constructed device is used for testing the slipperiness of various floor waxes.

DUST SAMPLING: Although local exhaust ventilation controls dust on this silica compounds mixer, industrial engineers make a routine double check with a portable dust collector.

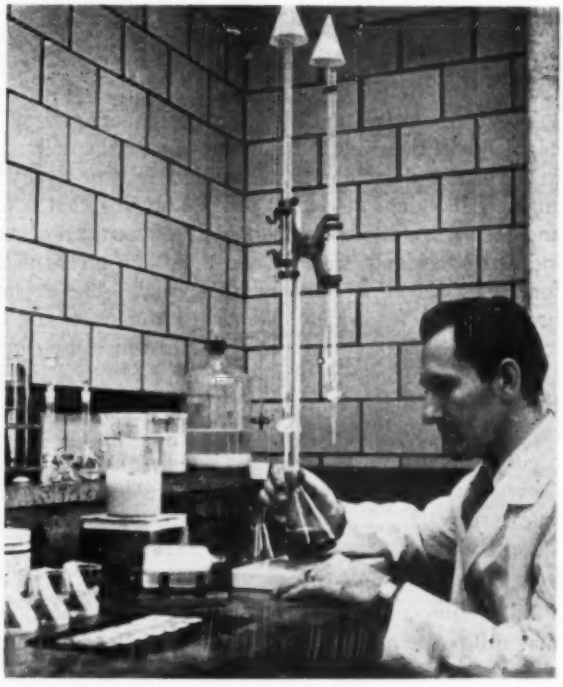
VAPOR TESTING: In the search for toxic vapors, a portable vapor tester is being used to make sure that this electroplater isn't exposed to harmful vapors at his work.

FOR HEALTH HAZARDS

ABSORBENTS TESTING: These piles of sample oil and water absorbents are being tested for absorbing ability. Absorbents are used on floor around machines to prevent falls.



SKIN IRRITANTS: To aid in the prevention of dermatitis, laboratory tests are made for harmful substances on soaps, creams and lotions and to see if water removes them easily.



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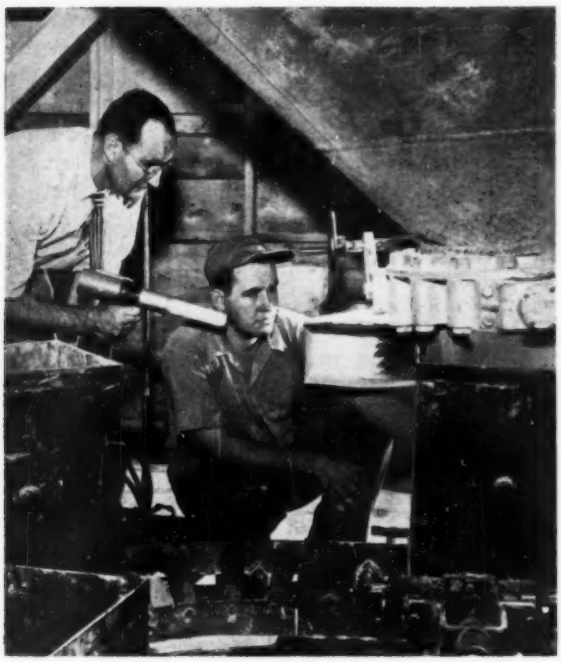

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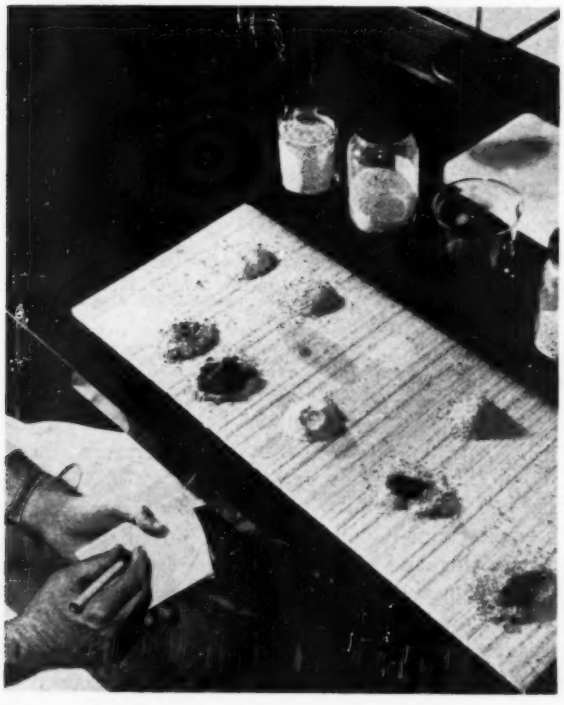

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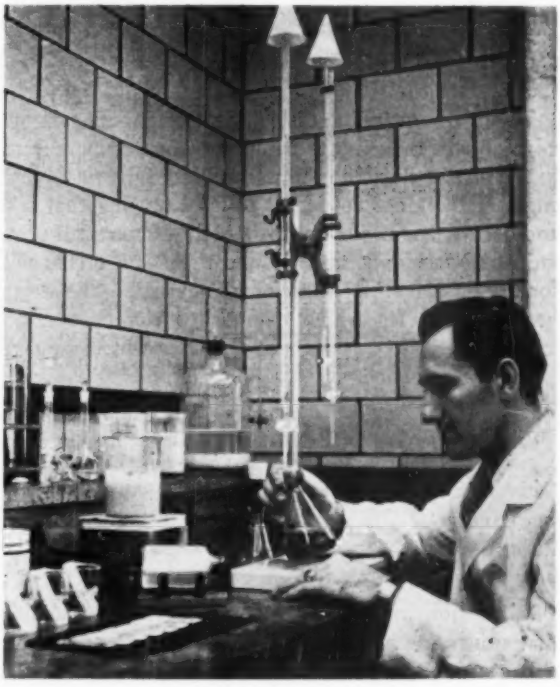


and fume sampler. This fume sampler sucks air into a small metal tube, electrically charges the dust particles, and hurls them to the walls of a grounded cylinder. The sample is then analyzed in the laboratory by the hygiene engineer. He magnifies the tiny dust particles to 1000 times their actual size and projects them on a special screen for observation. If the dust concentration in the air is above a specified level, he recommends that special protective devices be installed. A ventilating hood is placed over the machine or the workman is required to wear a respirator if added ventilation is not practical.

Checking Dust 3 Ways

A painstaking and thorough check of dust is made at each Westinghouse plant at set time intervals. Usually, dust is checked for three factors: composition, number of particles per cubic foot of air, and size of particles. At the same time, an evaluation is made of the dust or fumes around the worker's immediate area. Many other analyses of the air are made; for instance, for the presence of carbon monoxide around gas-fired furnaces.

A good deal of the success of the industrial hygiene operations staff depends upon its engineering knowledge. It must be able to discover possible hazards and it must also be able to alleviate the new-found hazards. An example of the use of this engineering knowledge is found in the unloading process used for powdery flint, feldspar, and clay. To avoid difficulty with these powdery materials, a pneumatic conveyor which sucks up six to eight tons of material in an hour was devised. The powder is stored in huge silos and, as a result, workmen are not exposed to excessive dust in the air.

Floor Testing

To aid them in increasing their engineering knowledge and in reducing the number of accident hazards to the lowest possible minimum, Westinghouse hygiene engineers conduct numerous tests. Knowing that slips and falls account for approximately 25 percent of all industrial accidents, they devised their own mechanism for testing the slipperiness of floor waxes. The device has a hinged leg which extends to the floor and a leather or felt boot at the end of the leg which measures two square inches in area—the approximate size of the heel of a woman's shoe. A downward pressure of only 20 pounds is needed to simulate the weight of a person. The end of the leg is moved outward along the waxed surface to a point where it will slip or give way completely. By measuring the distance the boot traveled before slipping, the testers are able to tell how easily a person may slide on the wax.

With more and more plants making use of machines that utilize atomic energy, hygienists must continually enlarge their scope of operations where radiation is concerned. Using knowledge gained from a study of the effects of atomic radiation and methods of measuring radiation intensity at the atomic plant at Oak Ridge, hygiene engineers maintain a constant check for preventing physical harm resulting from the use of radioactive isotopes and x-ray machines employed at the various Westinghouse locations. Special steps are taken to make certain that employees do not breathe radioactive dust or fumes and that the skin or other parts of the body are not affected by radiation from radioactive sources.

While searching for radiation effects, personnel are equipped with the latest detection devices such as geiger counters, ionization chambers, special film badges, electrometers, etc.

While it is true all hazards have not as yet been eliminated 100 percent, accidents and time lost have been reduced significantly by the industrial hygiene departments and it is not too difficult to believe that perhaps someday their goal of no industrial ailments will be realized.

Pictures by courtesy of Westinghouse Electric Corp.

Safety Wax Research

(Continued from page 52)

In the New York Region, federal employees met one evening weekly—many on their own time—to check the waxes on floors in the Veterans Administration Office at 252 Seventh Avenue and in the GSA regional office at 250 Hudson Street. Representatives of the Army, Navy, Marine Corps, Public Health Service and the Veterans Administration cooperated with GSA officials in making the tests. Thirty manufacturers voluntarily participated in the program of evaluating approximately 40 floor wax samples.

Specifications setting standards for a long-wearing, slip-resistant wax will be published soon. Manufacturers of products which conform to those standards will receive invitations to bid on government contracts. Preliminary analysis of the durability tests indicate a probable $2,000,000 saving on annual national costs, according to Mr. Downey. The federal government spent approximately $4,000,000 for floor wax in 1952, he said.

Benefits Widespread

An estimated 450,000 gallons of wax are used a year in the New York City area by federal agencies. Benefits of the safety wax research program will not be confined to government agencies. Cooperating manufacturers claim it will result in improved quality and acceptability and a greater stress on accident prevention by the entire industry. Voluntary assistance and cooperation have been given the GSA by the manufacturers of wax and allied products to advance the program in an impartial and honest manner.

Air Casualties

It's bad air that does it. But you can step up production by putting a Coppus Blower on the job to keep the air moving — and keep the men cool.

The kind of air a man works in has a lot to do with how much work he can turn out.

In confined places like shipholds or tanks or drums or boilers . . . or wherever the air is stagnant or hot or full of fumes . . . a Coppus Blower is a *must* for getting first-class work out of the men, all the time.

A Coppus Blower or Exhauster helps avoid sickness and lassitude due to bad air . . . and improves morale, too.

Portable and adaptable for special purposes, Coppus Blowers and Exhausters will have dozens of uses around your plant. The "Blue Ribbon" (a blue painted band) is your assurance of quality performance at lowest cost.

COPPUS

BLUE RIBBON BLOWERS

THE BLOWERS THAT PUT MORE MINUTES IN EVERY MAN-HOUR

CABLE MANHOLE AND TANK VENTILATORS — BOILER MANHOLE BLOWERS AND EXHAUSTERS — HEAT KILLERS — SHIPHOLD VENTILATORS . . . DESIGNED FOR YOUR INDUSTRY — ENGINEERED FOR YOU

MAIL THIS COUPON To Coppus Engineering Corp., 33 Park Avenue, Worcester 2, Mass. Sales offices in THOMAS' REGISTER. Other "Blue Ribbon" Products in BEST'S SAFETY DIRECTORY.

PLEASE SEND ME INFORMATION ON SUPPLYING FRESH AIR TO MEN WORKING:

- ☐ in tanks, tank cars, drums, etc.
- ☐ in underground cable manholes.
- ☐ in aeroplane fusilages, wings, etc.
- ☐ on coke ovens.
- ☐ on steam-heated rubber processes.
- ☐ on boiler repair jobs.

COOLING:

- ☐ motors, generators, switchboards.
- ☐ wires and sheets.
- ☐ general man cooling.
- ☐ around cracking stills.
- ☐ exhausting welding fumes.
- ☐ stirring up stagnant air wherever men are working or material is drying.
- ☐ drying of walls, sheets, etc., after treated with coating material.

NAME .....

COMPANY .....

ADDRESS .....

CITY .....

(Write here any special ventilating problem you may have.)

(For further details, use Key # K-34 on free inquiry Card on page 117)

Approved by New York City Bureau of Standards and Appeals No. 932-49-SA.

Millions of dollars in water damage to stock and equipment is caused annually by sprinkler systems which continue to release floods of water after the fire is out! Even in the absence of fire, an unexpected mechanical failure can cause a sprinkler head to operate, causing tremendous, unnecessary water damage.

Now you can protect your plant with "Sprinkler-Stopper," a valuable device which, when inserted into the ring of a sprinkler head, instantly stops the flow of water, but leaves the rest of the sprinkler system operative. As the sprinkler control valve need not be turned off, the plant is still protected against fire until all danger is passed.

Already in use in hundreds of plants, warehouses and public buildings, a "Sprinkler-Stopper" placed beside each fire extinguisher is a vital piece of equipment. "Sprinkler-Stopper" will prove of tremendous value in the event of fire, or if a mechanical failure should cause a sprinkler head to operate prematurely.

"Sprinkler-Stopper" is manufactured in two styles, Model A and Model B, which will accommodate virtually all of the sprinkler heads in current use. Be sure to specify the type head in your plant when requesting information.

Write for free catalog to Department P3

SPRINKLER-STOPPER SALES COMPANY

409 Grand Avenue Englewood, N. J.

(For further details, use Key # K-35 on free Inquiry Card on page 117)

ASA Body Draws Up Code Governing Use of Medical Gases

ACTING on the principle that there is no margin for mistakes that cost human lives, a group of manufacturers, military men and industrial researchers have drawn up an American Standard for eliminating one unpredictable hazard of hospital operation.

The standard is a safety code covering the use of medical gases. It prevents the accidental switching of gas containers on anesthetic machines and is infallible where human judgment is not. Thus physicians, dentists, hospitals and medical centers need not fear that carbon dioxide may be mistakenly administered for oxygen, or helium given instead of cyclopropane, with fatal results.

The new safety code, developed under the leadership of a committee of the Compressed Gas Association, is made up of some 40 representatives of manufacturing companies, technical societies, and the armed services. J. J. Crowe, assistant vice president of the Air Reduction Company, New York, is chairman.

The committee developed the standard in cooperation with the American Hospital Association and the Association of Anesthesiologists. It was tested this spring in a number of large hospitals.

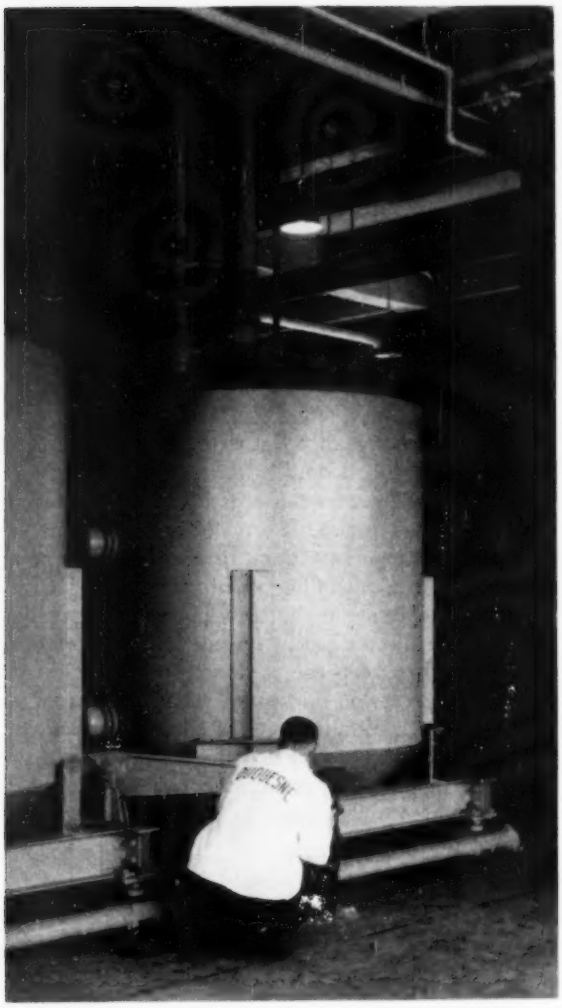
The safety code, called the Pin-Index Safety System, forms an important addition to the 56-page American Standard B57.1, Compressed Gas Cylinder Valve, Outlet and Inlet Connections, which has just been published in its newly revised form by the American Standards Association.

In this system, 2 pins are placed on the yoke connections of medical gas cylinders, each pin being in a different position for each type of gas. Two holes are placed in a corresponding position in the valve connection of the gas cylinder. Since there is only one combination of pins and holes for each gas, it is impossible to use the wrong gas. If the wrong cylinder valve is tried, the holes and pins will not match and the two parts will not fit together. A similar system further insures the patient's safety by making certain that the cylinder corresponds with the type of gas with which it is being filled.

Hospitals are rapidly adopting the new system because they can easily convert their existing anesthetic equipment without waiting for replacement with new, up-to-date equipment. A yoke adapter fitted with the appropriate pins slips onto the yoke of the gas machine. The new standard will be used internationally. It has been approved by the Canadian Standards Association and has been accepted by British industry and medical circles.

Copies of the standard for Compressed Gas Cylinder Valve, Inlet and Outlet Connections, (B57.1–1953) are available at the American Standards Association, 70 East 45 Street, New York 17, New York, for $1.50 a copy.

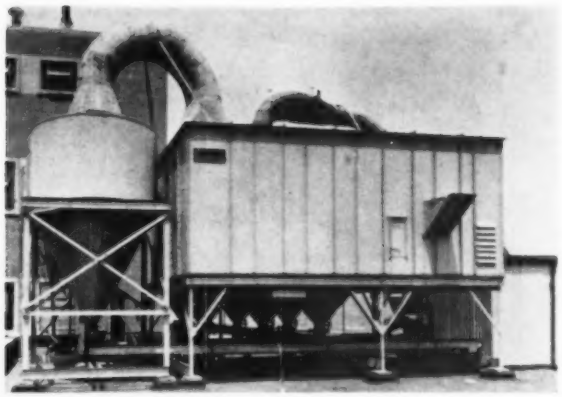
Interlock Prevents Brewing Process From Starting Without Dust Control



Weighing station for grains prior to milling. Dust collecting hood completely surrounds scale hopper for 100% dust collection.

THE Duquesne Brewing Company cannot make beer without dust control. Its new Pittsburgh Brew House contains a remote-control panel (controlling all automatic brewing processes) that is wired with an interlock. This device will not permit any process to begin unless the dust control system is operating. The dust collection system effectively salvages 500 lb. of grain dust from each carload of grain received. This reclaimed dust is valuable as cattle feed.

The equipment collects dust from a number of sources throughout the plant. These sources can be classified under two major headings: (1) collection of dust from grain ingredients prior to manufacture into beer, and (2) collection of dust from spent grain after the brewing process.



Collector is mounted on roof of brew house. One side serves the processing before brewing; the other after the brewing.

Included in the first category is the collection of dust from a unique suction system which is used to unload incoming grain from the railroad freight cars on the siding, and move it to the top of the 11-story brew house. This phase of the system also collects dust at the malt cleaners where husks, straws and broken grain particles which deteriorate, and similar foreign matter, are removed from the barley malt before it is loaded into storage tanks below. Screw conveyors which route material from the cleaners to the storage tanks are also connected into the dust control system. Storage tanks, scale hoppers for weighing raw material, polishers for further cleaning, malt and cereal mills (where the material is ground into a flour-like substance), cereal hoppers and ground malt hoppers and weighing stations for all these ingredients are effectively kept clean and free from dust.

Grain Reloading

After the brewing process has been completed and the wet, spent grain is separated from the beer and dried out in rotary kilns, dust control is again required as the spent grain is handled and loaded into freight cars. The importance of this phase of the operation is indicated by the fact that when 160,000 lb. of grain enter the plant in a day, approximately 50,000 lb. of spent grain cattle feed are shipped out of the plant that same day.

(Continued on next page)

Dust Control For Sure!

...THEN WE INSTALLED ALGRIP
Thus Doubling Production Efficiency
And Lowering Big Insurance Costs

In a large Eastern rolling mill, a ramp from the production floor to a storage area above was so slippery from oil and grease drippings that a fork-lift truck could not climb the incline by itself. An unloaded fork-lift truck had to push the loaded one. Already a safety hazard, the slippery ramp also caused production inefficiency.

INCREASED: Production efficiency by more than 50%

LOWERED: Accident insurance premiums to save thousands of dollars.

When A.W. ALGRIP Abrasive Rolled Steel Floor Plate was installed on the ramp, skidding stopped, accidents were eliminated, and one truck did the job better than two did before. *Greater production efficiency and lowered insurance rates paid for the ALGRIP installation.* Safe for vehicles as well as men, ALGRIP gives even steep inclines a hard-gripping, anti-skid surface.

In ALGRIP, tough abrasive particles (the same as used in grinding wheels) put hundreds of tiny safety brakes in every footstep—making it virtually impossible to slip. ALGRIP never wears smooth—heavy use only exposes new abrasive particles. The tough rolled steel in ALGRIP makes this floor plate stronger than other abrasive floorings. For safety that pays for itself, get the complete ALGRIP story by writing today for our new Booklet **AL-15**—without obligation.

At your request, an Alan Wood Steel Company safety engineer will call on you to show you how ALGRIP can be profitably used in your plant to lower insurance rates, raise production, and eliminate accidents.

Over 125 Years of Iron and Steel Making Experience

ALGRIP Abrasive Rolled Steel Floor Plate
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.
Other Products: A. W. SUPER-DIAMOND Floor Plate Plates • Sheet • Strip • (Alloy and Special Grades)

(For further details, use Key # K-36 on free Inquiry Card on page 117)

This Duquesne brewery was planned to be as automatic as possible, a fact indicated by the presence of a push-button panel on the fifth floor. Virtually all operations from the fifth floor to the eleventh are fully automatic and controlled from this push-button panel. However, as mentioned above, the equipment has been wired so that no push-button operating any automatic brewing process can function until the dust control system has been turned on.

The reasons for this type of protective interlock are found in the very necessity of having dust control in the brew house. Of primary consideration in complete dust control is the fact that the brewing process produces flour-like dust which would spread all over the entire neighborhood of the plant, if it were not collected. The brewery is located in the middle of a large residential section and a hospital adjoins the plant. Another consideration is the fact that Duquesne considers it good public relations to conduct plant tours. Cleanliness therefore is essential at all times, because a tour may come through the plant at any time during the day. Also considerable valuable cattle feed would be lost as dust if it were not for the effective system of dust collection.

The dust collector for this system was mounted on the roof of the brew house. It was designed with one side handling all operations prior to the brewing process and the other side handling spent grain dust. Depending upon operations in the brew house, either or both sides of the collector can be operated. The rapping device installed to keep the cloth screen filters clear was originally wired to go into action when the system was turned off for a certain length of time. However, subsequent operations proved that the system did not shut off so the rapping devices were never actuated. Therefore, the wiring was changed to make the rappers operate continuously.

Pictures by courtesy of Pangborn Corp.

Symposium on Noise Problems To Be Held In Chicago Oct. 23–24

SPEAKERS and program have been announced for the fourth annual National Noise Abatement Symposium held the 23rd and 24th of this month at Armour Research Foundation of Illinois Institute of Technology.

The symposium, designed to give a comprehensive picture of nationwide activities in the field of noise, will feature talks by leading authorities on outdoor noise problems. One session will be devoted to the industrial noise hazard.

More than 300 scientists, engineers, doctors, architects, manufacturers, and civic authorities are expected to attend the national meeting. Although the 3 previous meetings were 1-day affairs, this year's symposium has a broader scope and will extend over a 2-day period. Eleven speakers will fill out the agenda for the two morning and one afternoon sessions.

NEW CLEANSER

Employee's hands have hard-to-remove paint splotches on them.

The same hands after paint removal by oil-dissolving cleanser.

LICKS OIL!

ALMOST everyone at some time or another has wished for a skin cleanser that would remove: the paint from his hands; the tar from his wrist; the putty from his nails; or auto grease and oils from the folds of his skin. Many a roofer has wished that he could get the pitch off his skin without the use of range oil, kerosene or gasoline.

There have been many cases where a man has been forced to give up his life's work because he could not get some specific material off his skin without the aid of an irritating and sensitizing skin solvent. Painters, for example, have been forced to change their way of making a living because they could not eliminate the paint from their skin without using an irritating cleanser that caused dermatitis.

Cutting oils are used in industry to lessen the friction between tools (or wheels) and the part that is to be cut or ground . . . to increase the grip of the cutting tool on the part to be machined . . . to cool the parts, tools, wheels, etc. . . . and to lubricate them. Usually petroleum products, they can also be lard, other animal oils, or occasionally vegetable oils. Sulfur and chlorine are sometimes added to increase cutting efficiency.

Cutting oils and other industrial oils are major sources of skin irritation. Indeed, analyses of large numbers of industrial skin eruptions by leading dermatologists have demonstrated that petroleum oils and their products are among the most common causes of occupational skin eruptions. The removal of these oils from the skin is of prime importance in industrial hygiene.

Experiments made by two Boston physicians recently, using fluorescent oils, indicated that with the usual types of cleansers there was difficulty in removing all the fluorescence from the skin. In conducting the experiments, it was necessary to remove the fluorescence between testings. The only satisfactory cleanser, the physicians found, that successfully removed the fluorescence from the skin was a newly discovered, oil-dissolving cleanser.*

During the past 13 months, this new cleanser, in its basic form, has proven its ability to remove tar, pitch, grease, oil, kerosene, gasoline, putty, caulking compound, oil-soluble dyes and many other oil-soluble materials from the skin. Rapid acceptance into various industrial plants has followed. The reasons can be readily noted in two examples, chosen at random.

A plant physician in a large corporation gave the cleanser to 8 dermatitis patients to use. Seven reported such an improvement in their skin condition that they were going to continue to use the cleanser regularly. The physician himself reported that there was no question of improvement in all the cases that had persistent, low-grade, non-disabling oil folliculitis.

The product is now being used in the home clinics of two leading insurance companies. A nurse in the first-aid room of a newspaper printing plant noted that pressmen who had been sent to one of the insurance company's home clinics returned to work with their grimy hands entirely cleaned. She called the nurse at the clinic to find out how she had been able to clean the hands so thoroughly; and, of course, was told about the new cleanser.

The use of the cleanser is simple. It should be intimately mixed with whatever substance is on the skin and briskly rubbed in until all of the paint or grease has been softened; then the entire mixture can be washed off with lukewarm water.

There are several modifications of the cleanser for specific cleansing problems. Some will take off certain inks and stains, some will remove certain difficult solvents, and one modification has proven to be especially valuable to the machinist. For example, this modification alone has cleared up one case of oil folliculitis while the victim continued to work at his regular machine. When the machinist resumed washing with the plant's regular cleanser his skin erupted again. However, the resumption of use of the oil dissolving cleanser again cleared up the dermatitis.

* The name of the manufacturer may be obtained from the Editor.

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A Study of Medical Aspects Of Workmen's Compensation

PUBLICATION of "Medical Aspects of Workmen's Compensation," second in a series of books to be issued by the Commerce and Industry Association of New York, Inc., in connection with its long-range study of workmen's compensation costs, administration and operation in New York, is announced by Thomas Jefferson Miley, Executive Vice President.

Recorded in the 112-page volume are transcripts of talks and questions and answers given by 7 national authorities in their respective medical fields at a 2-day session—one on Medical Treatment and Care and the other on Rehabilitation—conducted by the Association's Special Committee on Workmen's Compensation.

In connection with the medical phase of the Association's fact-finding study, Mr. Miley points out that with the constant advances in medical knowledge have come increased problems in the administration of the workmen's compensation law. "The concern of the Association's special committee," he states, "is not with the coverage of those accidents and illnesses which have a definite causal relationship to a claimant's employment but with the need for development of objective standards to measure impairments and objective evidence of injury rather than the use of subjective complaints."

Compensation Problems

Among the matters the special committee will go into, are the content of workmen's compensation laws in the various states so that a genuine comparison of costs can be made; administrative problems under the New York law and the factors which tend to increase costs; and the experience and problems of private insurers, including self-insurers, in meeting their obligations under the law. Other areas of study will include hearing procedures; medical evidence particularly with regard to subjective complaints; the occupational disease section of the law; and administrative operation of the Workmen's Compensation Board and the insurance carriers.

Here are some of the problem areas discussed in the volume on Medical Aspects of Workmen's Compensation:

Medical Treatment and Care by the Industrial Medical Department

"It seems completely logical to require doctors who would like to undertake the treatment of industrial injury and occupational disease cases to take post graduate work that would fit them to do so. Such post graduate work should entail besides didactics some practical 'in plant' experience.

"To accomplish some of these objectives it might well be necessary to constitute additional panels of experts, especially in the fields of orthopedics, neuropsychiatry and cardiovascular disease, where many of the difficult problems occur. The experts could give valuable assistance to referees in compensation court in their very important responsibility of determining 'fact.' They could place greater emphasis on rehabilitation by a return to work. They could protect the worker against unwarranted surgery and the invalidism produced by prolonged routine treatments. They could put the diagnosis and prognosis of compensation cases on a more secure basis."

Cardiovascular Diseases

"Although only 0.2% of allowed claims in New York (Illinois recently reported 0.4%) were related to heart disease, the cost was out of proportion. The cardiac awards were expensive, amounting to between 3 and 4% of the total expenditure, which indicates that the average cardiac case was 15 to 20 times more costly. Also, cardiac awards have become more costly each year. In 1947, the average was $6,100; in 1948, $8,700; and in 1949, $9,400.

"A great majority of the cases coming before the compensation board involve degenerative diseases, and this is the group we know least about. There is plenty of room for individual opinion and bias. If the facts that are known about heart disease could be utilized by the referees it would help a great deal, even though we acknowledge frankly that there are important gaps in present medical knowledge.

"In all medical testimony, the possibilities may be numerous and confusing. To the well trained doctor, the probabilities are usually clear cut. Emphasis in the courts should in all instances follow the line of probability."

Orthopedic Treatment

"The back is literally the arch of industry. Again, it is the most baffling to diagnose, the most unsatisfactory of treatment, the most promotional in economics and the most difficult of disposition.

"The year 1949 recorded statistically over 26,000 back cases averaging 46 weeks disability and 600 back cases with bone injuries averaging 232 weeks disability—what staggering reserves in this field alone! The private practice figures have been estimated at 3 to 6 weeks convalescence for soft part back injuries and 3 to 6 months average for bone injuries. Why the discrepancy! The industrial back is the people's burden.

"The chronic back is a surgical, psychological, sociological and economic problem—particularly the cure and the disposition of the case after the orthopedic cure. The chronic back ultimately becomes a litigational problem—how many back cases return immediately to work after a lump sum settlement!—after months of 'disability' and treatment! Chronicity leads

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to neurosis—neurotics develop regressive, hostile and depressive changes and treatment then is often hopeless—the cure is often effected by legal disposition."

Occupational Loss of Hearing

"It appears to me that the solution of the problem, in so far as understanding how much loss could be designated by the individual occupation, can only be understood by a pre-employment examination. Recognizing the fatigue factor, we find that after about 5 or 10 minutes of high intensity noise, there may be a loss of between 30 and 50 decibels of hearing in the high tones particularly. Workers may also complain of a little noise in the ears and of course dullness to some extent.

"Then, in some cases, in about 2 hours or perhaps 12 hours, depending upon the susceptibility of the individual which is recorded by this fatigue factor, we will learn a good deal. In other words, if you have a pre-employment examination, it will be possible to test the individual and determine his fatigue factor. At a later interval of rest or change of occupation make another examination. After a number of these tests you can find out whether this man will have a greater amount of loss because of his occupation than another."

Rehabilitation

"Eighty percent of rehabilitations should be done by the practitioner. There is no reason in the world why the surgeon or the orthopedist or internist, in the garden variety of patient, should not do rehabilitation. It is a part of his responsibility.

"Rehabilitation centers like that at New York University—Bellevue Medical Center should be reserved for the severely disabled patient and that individual you cannot adequately care for without a trained team, any more than you can expect the average general surgeon to go in and do definite brain surgery. This is echelon, just as all medicine is echelon.

"There is no greater problem in rehabilitation than the back cases. Statistics of the New York Compensation record in 1949 and 1950 show that approximately 23,000 back cases were closed. Those that had just soft tissue injury averaged 42 weeks of compensation away from work. Those which had bony injury to the back averaged 246 weeks away from work. That is almost 5 years! These statistics did not even count those who were paraplegic.

"When we train the average paraplegic whose cord is severed, in 120 days, so that he can go back to gainful work, there is something wrong. A pilot study on workmen's compensation cases in New York, has tried to see what could be done with an adequate psychiatric staff, in giving definitive therapy to these claimants with bad backs. Results have been discour-

(Continued on page 78)

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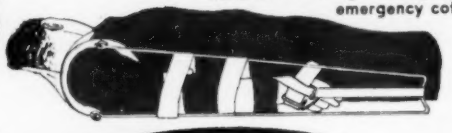

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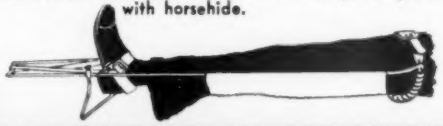

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The Industrial Nurse

Editor
Rosamond J. Webster
R.N., A.M., Ph.D.

Psychiatry in Industry

A RECENT issue of the journal of the American Medical Association featured an editorial under this title. It pointed out that, although it is only 33 years since the initial suggestion that a psychiatrist could aid materially in solving the problems of industrial unrest, many methods are now being used to assist the emotionally upset worker to meet the psychological demands of contemporary industrialization.

Industrial medicine in England has adopted the values of psychiatry for use in occupational selection, rehabilitation and resettlement, supervision of the young factory worker, industrial training, and the improvement of morale. Personnel directors have reached the services of psychologists and social workers to orient management bodies in the mechanisms needed for more satisfying living. At Cornell University's New York State School of Industrial and Labor Relations a formal training program in industrial psychiatry has been inaugurated in which one of the objectives is to pool the resources of the specialists in individual adjustment and the experts in group dynamics.

As consultant to management the psychiatrist may help an industry to work out those unconscious and emotional factors that inhibit production and create social stresses, illnesses, and dissatisfactions. With the demands on present-day industries for greater production, emotionally marginal employees may be unable to tolerate the stresses of deadlines, overtime, boom towns and impaired human relations. These are distinct challenges that face all involved in production, personnel selection, supervision, safety, medical and industrial nursing services. With modern industry's trend to continuous production, the failure of one member of a working team to do his part may seriously affect an entire production line. Those who come to the industrial nurse with their headaches, complaints of tiredness, of supervisors or of fellow workers "riding" or criticizing them unfairly—all of these, and others, may need psychiatric advice. The nurse can serve as an effective case finder.

New Legislation

IN 1952 a total of 14 state legislatures passed some laws affecting labor. California enacted no labor laws during the regular session but did take such action in a special session. There were several important enactments in workmen's compensation. General increases in benefits were approved in Kentucky, Michigan, Pennsylvania, and Virginia. The trend toward occupational disease coverage was continued. Virginia shifted from schedule coverage to compulsory full coverage. Louisiana covered occupational diseases for the first time—listing 6 diseases as compensable. Other significant legislature action included additional safety legislation for the protection of workers in Massachusetts and New York.

In the former state, Chapter 155 authorizes the Department of Labor and Industry to make safety inspections of places of employment, to determine what safety devices or other safety requirements are necessary, and to make necessary rules and regulations. The law provides for a fine of not more than $100 for each violation of a reasonable safety rule or requirement. In Michigan Act 155 permits an injured employee to accept benefits under workmen's compensation laws and also to sue a third party. Formerly he was required to elect one remedy or the other. The employer or the insurer is permitted to sue the third party if the employee does not do so within a year after the injury. In New Jersey, Chapter 147 prohibits an employer from requiring an employee or applicant for employment to pay for a medical examination required as a condition of employment. If the latter does pay, the employer must reimburse him. In Pennsylvania, Act 615 creates a permanent Public Safety Commission which is required to meet at least once a month to review the accident hazards within the scope of the various State departments, including Labor and Mines. New accident hazards and any type of accident occurring at a greater than normal rate are given special attention at these meetings. Other states too have enacted labor laws recently. It is part of the industrial nurse's job to be informed on these labor and safety developments.

Magnitude of Service

THROUGH a full view of the extent of medical and industrial nursing services in one of our large plane factories, it is possible to get an overall picture of the job that industrial medicine does.

In a New York State plant with over 21,000 workers, there is a completely equipped hospital. It is staffed by 26 full-time nurses, 3 full-time physicians and 16 part-time physicians. Its facilities include X-ray, surgery, general and minor treatment rooms. Electrocardiogram and diathermy machines, as well as a fully equipped ambulance, are also available. Pre-employment examinations, including chest X-rays, are given to all new workers. The hospital staff sees an average of 400 patients a day. Many of these are workers who complain of not feeling well during the working day. They may either be given a dose of aspirin or a half hour's rest and sent back to work or they may be sent home. Many are employees who are checking back for work after an illness. Many minor cuts and bruises develop in such a plant and are all cared for by the medical and nursing staffs. Amateur treatment through the use of personal first aid kits is forbidden in the plant. Every injury, no matter how slight it may seem to be, must be reported to the hospital.

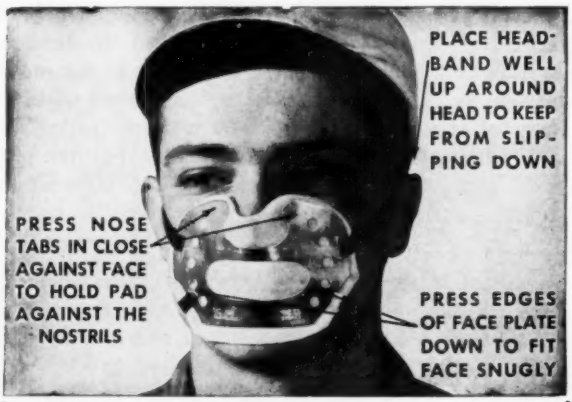
Extensive as the hospital facilities are, it is estimated they would probably have to be doubled if it were not for strictly enforced safety rules. Violations are causes for disciplinary action in the form of warnings or dismissal. Safety glasses are also supplied to all whose work requires them. The No. 1 safety rule holds that eye protection must be worn whenever the employee is doing work where flying particles or splashing materials might injure the eyes. The large cafeterias maintained by the company are constantly checked for cleanliness and sanitation by the company medical departments, as well as by the local and state authorities.

What such a large plant does is not always applicable in smaller establishments, but large factories serve as guides in many ways.

Lighting

A MAJOR factor in production, safety, and comfort of workers is plant lighting. This may be inadequate in varying degrees, or so glaring as to affect the eyes of the workers. Lighting specialists have played an important part in improving the lighting of work places. They have been consulted by many large concerns in planning illumination for new structures, and in improving that in existing buildings. That is the job of the lighting engineer.

There has also been much progress in lighting application, the development of new techniques, new sources and new concepts. The fluorescent lamp has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been developing in size, light output, brightness, color, and operation. It has brought to many industries and industrial processes a linear source of light which has aided greatly in diffusing the light into complex machine structures, and revealing detail that has been difficult to light.

Also remember that factor which aids seeing will increase the probability that the workman will detect the causes of an accident and act to avert it. With rapidly moving mechanisms and parts, mechanical failures may result in accidents occurring too rapidly for any averting reaction on the part of the worker. However, mechanical failures of this nature are often preceded by evidences of the existence of undue stresses and strains, which may be detected if sufficient illumination is provided.

For those interested in following up this subject further, it is suggested that they obtain a copy of a recently published report entitled "Industrial Lighting." This is a reprint of American Standard Practice for Industrial Lighting. It may be obtained through the U. S. Department of Labor, Bureau of Labor Standards.

Filling A Need

NOT only is there a shortage of nurses for hospitals, clinics, public health and private duty; but there has always been a marked shortage of properly trained industrial nurses. This is due to many causes. One of these, of course, relates to the fact that few, if any, schools of nursing of the 3-year variety provide any training in the field of industrial nursing. But this lack of training facilities does not apply only to industrial nurses.

A leading physician in the field of industrial medicine points out that there is an acute and constantly increasing need for more and better medical performance in American industry, with particular reference to the application of practical measures of preventive medicine. This need is especially urgent in small industrial plants. In view of the dearth of trained personnel in industrial medicine and the certainty that most of the talent made available in the near future will be absorbed by large industrial organizations, he comments: (1) Medical service in the small industrial organization will be provided by physicians engaged in general practice; (2) if such service is to include preventive measures to any extent, the general practitioner will have to be familiar with the principles and techniques of preventive medicine as these apply to industrial employees and their workplaces.

Now, the Curriculum Guide for schools of nursing provides for no training in nursing, public health and related matters as they apply to industry. There is provision for an elective in first aid and emergency situations. While such training can be helpful to those who choose such an elective, if they serve in industry, much more must be provided. Graduate courses help to meet the need somewhat; but the geographic locations of the institutions offering such courses, and the wide distribution of industrial nurses mitigates their value and leaves much to be done.

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The Red Light of Health

THIS is the title of an interesting article on obesity prepared by a professor of medicine in one of our leading medical schools. He quotes an English authority who wrote: "The unlovely condition called corpulence or obesity has been divided into three stages known respectively as the enviable, the comical, and the pitiful. Such a classification is based upon a false estimate of values, for no case of obesity is enviable. Most of them are in a sense comical, and all of them are pitiable."

Obesity is generally recognized as being dangerous. It predisposes to diabetes, increases the tendency to hypertension, favors the development of arteriosclerosis, and contributes to heart failure. It increases the evidence of gallstones, causes shortness of breath on exertion, intolerance to heat, and excessive sweating. It leads to eczema, furunculosis, fosters the development of postural emphysema, flat feet, hernia, and osteoarthritis of the hips and knees. In every physical activity, its presence constitutes a burden varying only with the degree of adiposity. It is unaesthetic, socially unacceptable, and psychologically crippling. It shortens life which has been made ridiculous and miserable by its presence.

This is quite an indictment, and should serve as a red light of warning for those who want vigorous health and reasonably long life. "But," asks the fat man, "what can I do to lose weight?" There are many many things he, or she, can do. The first is to stop the exercise of the muscles of the jaw. In other words, to limit the calories taken each day through food and drink.

The industrial nurse need not, in fact should not, set herself up as an authority in weight reduction and correction of obesity. That is primarily a job for a physician. However, she can be an effective stimulus in getting the overweight individuals to seek medical advice. She can also encourage them to stick to the task prescribed by medical advisors.

Medical Aspects of Compensation

(Continued from page 72)

aging. Out of a group of some 300 less than 10 cases, or about 3 percent, could go back to work.

"During the same period a hundred acute or semi-acute back cases were referred by physicians. A comprehensive back clinic which has an orthopedist, a neurologist, a psychiatrist and a rehabilitation specialist, who converge on the problem for all of these various disciplines got 90 of the 100 sent in from these sources, back on the job in 6 weeks."

★ ★ ★

"No doctor or individual can evaluate disability. You have scheduled losses, and that sort of thing, but they represent modifications and compromises with actuarial ideas, and legislative compromises, of the push and pull between labor and industry. But there is no

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BURNS *and* MINOR INJURIES

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man in the world who can tell you how much a man is worth, how much work he can do.

"There are a million accidents from automobiles alone. But we have 400,000 cases of poliomyelitis and 7 million people who are hard of hearing.

"From 25 to 30 percent of the selectees who are examined for military service are being turned down as unfit. Those physical requirements are quite stiff and rigid, but whom are we examining? Not our superannuated. We are examining the flower of our nation, kids from 19 to 25. We are constantly boasting about our high standard of living, our devotion to sports and out-of-doors. And yet, when you examine these young people, you find, instead of having a large source of military supply, that the body economy is shot through with decay and disease."

* * *

"A comparatively recent study of 2,079 cases treated at the Boston Rehabilitation Center reveals some statistical facts of interest. The average age of male patients has been 43 years. The average age of females 45 years. The average length of time from the injury or surgery to admission to the Center has been 6.5 months. The average length of treatment has been 42 days. The average cost per case has amounted to 480 dollars. Of the total of 2,079 cases, 1,747 or 84 percent were improved by treatment. The number not improved by treatment was 332 or 16 percent. Of those improved 67 percent were restored to work ability.

"Of the 59 open paraplegia cases, reserves of almost 3 million dollars to pay for future indemnity and medical benefits which will be due must be carried. Rehabilitation has been actively undertaken on 38 paraplegia cases. Rehabilitation has been completed on 26 cases. Of that number 17, or 65 percent, have returned to work or are in business for themselves. The remaining 9 cases have been returned to their own homes or convalescent homes.

Statistics on the 26 Cases Rehabilitated

Total estimated compensation cost if not rehabilitated	**$536,813**
Total estimated medical cost if not rehabilitated	**2,188,800**
Total cost of our rehabilitation	**223,089**
Total estimated saving in compensation cost by rehabilitation	**41,200**
Total estimated saving in medical cost by rehabilitation	**1,404,800**

"Rehabilitation cost 223,089 dollars which means a net saving of 1,222,911 dollars as a result of the rehabilitation program for paraplegics."

Distribution of "Medical Aspects of Workmen's Compensation" is being handled by the Association's Social Security Division. Copies of the book are available at $1.50 for a single copy and $1.00 each in lots of a dozen or more (plus 3 percent N. Y. City Sales Tax where applicable).

Learning..... the hard way

DON'T BE A CIRCUS FREAK!

THERE is an old story of the circus that tells of the death-defying side-show performer who ate glass, lit gasoline in his mouth, and swallowed hundreds of swords and other sharp objects. He seemed to bear a charmed life to the crowd, and his fellow performers recognized him as a superb craftsman in deftly swallowing the multitude of dangerous materials without injuring himself. Suddenly he became deathly ill. At first, it was thought that he had at last been cut up by his diet. However, it was soon found that he was suffering from poisoning. Some of the metal objects he had swallowed had gradually poisoned him.

Roofers, lathers and men in other similar trades have a habit of holding nails in their mouths. They too are fine craftsmen and seldom seem to be cut by the sharp nail points. However, they are taking a serious chance. Recently a roofer developed a severe case of lead poisoning by mouthing lead-coated nails. Before you put anything in your mouth find out what it's made of and whether it is chemically dangerous.

NEVER!

ONE of the very oldest safety maxims is . . . never leave a hole in the floor unguarded. It may be quite funny to see a cartoon character plunge through an open manhole or trapdoor while looking the other way, especially when another cartoon character, the underdog, has cleverly led him to the fall. It's something else again, when it happens to people.

A fall through an unguarded hole in the floor of a packing house shed recently took the life of a stenographer. The hole, located near the entrance stairway, was not railed or covered with a firm walkway. It was covered though . . . covered over with heavy paper! A floor-laying crew working in the building had carelessly built this death trap. The woman stepped in the hole, and broke her neck in the fall. Carelessness, the great enemy of safety, claimed another victim.

A DANGEROUS GAME . . . "RING AROUND THE MACHINE"!

RECENTLY two men lost fingers when their wedding rings became snagged. One caught his ring on a nail while stepping down from a bench; the second caught his ring on a revolving key on a shaft. Wearing rings and jewelry on the job can be very hazardous; therefore, many plants make the omission of jewelry when on the job a condition of employment. This is especially true in the case of women. Necklaces, bracelets and earrings as well as rings can cause injury. For those who refuse to remove their rings and are permitted to retain them while at work, a margin of safety can be gained by applying a piece of adhesive tape over the ring. Let the ring on your finger mean "for better" . . . not for worse!

A PAINFUL ILLUSION

ILLUSIONS are supposed to be imaginary and it seems impossible that they should ever cause anything as real as an accident. However, this mirage did just that. Accidental falls are such a major category of accidents that they have received enormous attention from safety personnel. Proper lighting has been installed, railings have been put up, abrasive materials have been added to the floor, etc. Still it is easy to destroy the value of these preventive measures by a single error. In this case, an employee sprained an ankle and had a bad fall on a flight of stairs. He claimed that a torn piece of carpeting on the stairs had caused his misstep. On investigation the carpet was found to be perfectly tight. It was discovered instead that the pattern of the carpeting had been the cause of the accident. Its continuous pattern had masked the edges of certain steps, so that the employee had missed a step which he couldn't see because of the camouflage.

This camouflage danger applies to all stairs, not just carpeted flights. The edges of stair treads or nosings should be clearly distinguishable from the risers and treads. Treads which are not clearly delineated should be corrected. Warning color paint, usually in stripes, is a good device on uncovered stairs. Carpeted stairs should have the pattern at the edge of the stairs contrasting with the pattern of the rest of the carpet.

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Our Safety Shoe Plan

Works Like This...

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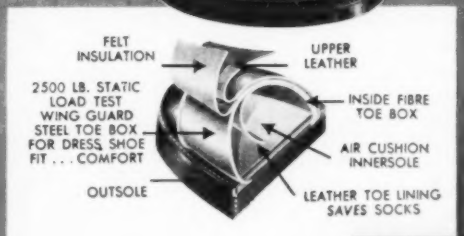
2. Backed by more than 75 years of Charles Chester Armor Toe manufacturing experience, these modern Armor Toe Safety Shoes have the new Dress Shoe Styling, plus patented Air Cushion Innersole Comfort that will build a successful Safety Shoe Program in your plant.

Catalogue and complete details available upon request.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AIR CUSHION SHOES

CHARLES CHESTER SHOE COMPANY, BROCKTON, MASS. Fine Shoemakers Since 1876

(For further details, use Key # K-47 on free Inquiry Card on page 117)

Floor Maintenance Goes to the

Louisville	October 5	Spokane	January 4
Cincinnati	October 12	Seattle	January 6
Indianapolis	October 15	Portland	January 8
Columbus	October 19	San Francisco	January 11
Pittsburgh	October 21	Los Angeles	January 14
Rochester	October 23	San Diego	January 18
Boston	October 26	Phoenix	January 20
Hartford	October 28	Oklahoma City	January 25
Newark	October 30	Dallas	January 27
New York City	November 2	San Antonio	January 29
Philadelphia	November 4	Houston	February 1
Baltimore	November 6	New Orleans	February 3
Washington	November 9	Miami	February 8
Buffalo	November 12	Jacksonville	February 10
Cleveland	November 13	Atlanta	February 12
Akron	November 16	Birmingham	February 15
Toledo	November 18	Memphis	February 17
Detroit	November 20	Nashville	February 19
Grand Rapids	November 23	Knoxville	February 22
Chicago	November 30	Winston Salem	February 24
Milwaukee	December 2	Richmond	February 26
St. Paul	December 4		
Des Moines	December 7		
Peoria	December 9		
St. Louis	December 11		
Kansas City	December 14		
Omaha	December 16		
Denver	December 18		
Salt Lake City	December 21		

A 5 month tour through 50 cities begins this month for a travelling one-day clinic on reducing floor cleaning costs.

A NATION-WIDE program of one-day sanitation cost control clinics, organized to bring improved methods and ideas on floor maintenance to sanitation and maintenance men, begins the 5th of this month in Louisville, Kentucky. The clinics, each of which has been titled: "Lowering Costs In Floor Cleaning," are being organized by Mohe H. Solworth, industrial sanitation consultant. They are supported by leading manufacturers and jobbers in the sanitation supply field as well as many large industrial companies together with various associations interested in the promotion of better sanitation ideas and methods.

The primary purpose of the clinics, which will wind up at Richmond, Virginia on February 26th, 5 months and 49 cities after the Louisville opening, is to develop enthusiasm among participants for adopting ready-to-use ideas, plans and work tools which now save thousands of dollars a year in leading floor maintenance programs.

Invitations are extended to sanitation directors, sanitation supervisors, house keepers, building maintenance superintendents, safety directors, industrial hygienists, and members of plant management such as purchasing agents, general managers, and personnel directors who are directly or indirectly concerned with sanitation methods and costs. Attendance at each one-day clinic is limited to 100 registrants so that the meetings will be effective and enable all to participate.

The typical program for the one-day clinic begins with a morning session which discusses the place of the sanitation supervisor in management, what he must know in order to check costs, where he can look for the important maintenance factors and how he should plan a dollar-saving floor maintenance program. The important points stressed in the last topic include determination of the labor requirements, analyzing the work load, realistic work assignments, the elimination of work through preventive sanitation and dispensing facilities, a modern floor cleaning training program and cost control through a materials control system.

Country!

The pre-lunch session takes up dry-cleaning of floors (dusting, sweeping and dry buffing) and concentrates on how many square feet may be dry cleaned per hour under varying conditions, the basic cleaning procedures and quality performance testing of floor maintenance tools.

After lunch, the clinic turns to wet cleaning floors at minimum cost. Again, the number of square feet that may be cleaned under varying conditions receives considerable attention. Basic cleaning procedures and methods, the selection of modern wet cleaning equipment and its use for maximum efficiency, the mechanics of detergency in floor cleaning, the effect of cleaning on resilient and non-resilient floors, research behind modern floor cleaning products and special wet floor cleaning problems and their solution occupy the rest of the session.

After an intermission, the central theme of discussion becomes finishing the floor maintenance job. In this section the selling of the sanitation supervisor's program to top management is detailed. Finally, a panel of local and national experts conducts a question and answer forum and open discussion on reducing floor cleaning costs to close the one-day clinic.

A display of floor cleaning equipment and other exhibits, a library on sanitation, charts of successful programs, and laboratory instruments will accompany the clinic on its tour. Free kits of work tools for the sanitation supervisor will be available, and a free management educational mailing program will be in operation.

Further detailed information on the clinic may be obtained by writing Industrial Sanitation Counselors, 2934 Cleveland Boulevard, Louisville 6, Kentucky.

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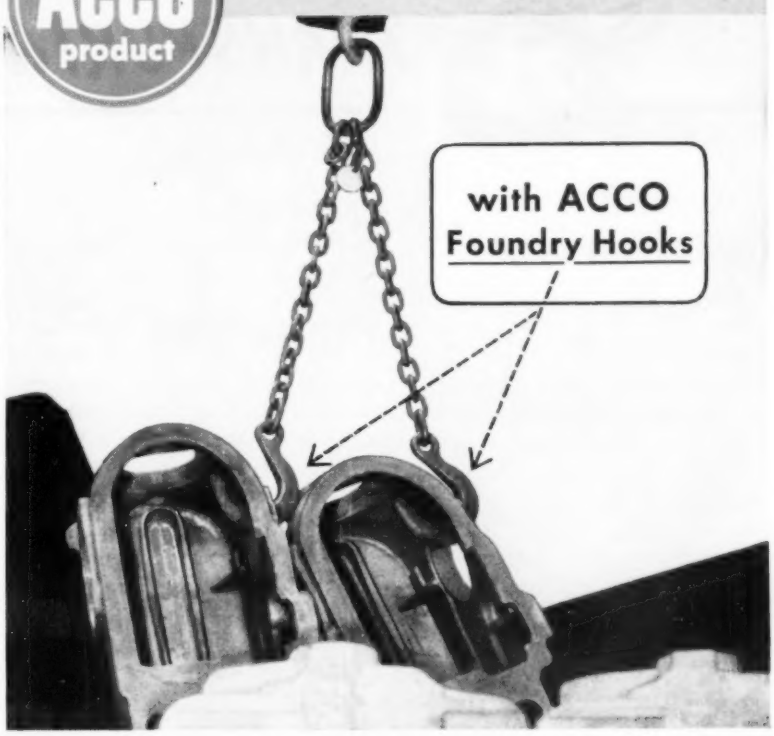

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These hooks are drop forged of the same material as the chain. They are built into ACCO *Registered* Endweldur Sling Chains at the factory and the complete assembly is proof-tested from bearing to bearing.

ACCO Foundry Hooks are safer than home-made hooks. And they're cheaper because you save the cost of fabricating and assembling to the chain in your plant. The completed unit bears the well-known ACCO *Registered* identification ring—your assurance of highest sling chain quality.

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TRANSPORTATION SAFETY

Traffic Law Survey Finds No Uniformity

RESULTS of a national survey to learn the progress made by the states in more effective enforcement of traffic laws have been disclosed by Chief Justice Arthur T. Vanderbilt of New Jersey.

Chief Justice Vanderbilt, president of the Institute of Judicial Administration, Inc. and dean emeritus of New York University's School of Law, explains that the study has been made to determine state-by-state progress in adopting 16 recommendations for better traffic law enforcement made in 1951 by the states' chief justices and approved by the governors.

The survey report is based on answers to a questionnaire from some 200 traffic court judges and prosecutors in the 48 states. It is expected to assist public officials throughout the country in planning programs for better enforcement of traffic laws.

Among the recommendations made by the chief justices are full integration of traffic courts into the states' judicial systems (thereby taking them out of local politics), separate sessions for handling traffic cases apart from other criminal business, and adoption of a nonfixable uniform traffic violations ticket similar to those used in Michigan and New Jersey.

Some of the findings of the survey are:

Ten states reported complete or a high degree of integration of traffic courts into their judicial system, and 17 are considering reorganization in this direction. Ten states have statutes requiring that suitably dignified and attractive courtroom facilities be provided, 11 have such statutes for certain courts, and 27 have no law of this type. Separate sessions for handling traffic cases apart from other criminal business are held in all or most of the courts in 16 states. The remainder of the states limit separate sessions to metropolitan areas or do not follow the recommendation.

A uniform "nonfixable" traffic ticket (with carbon copies processed through two or more separate enforcement agencies) has been adopted by 5 states. Ten states use a ticket of this type to a limited extent and 28 do not. Five states report no need for such a ticket. Eighteen states have public prosecutors for all or nearly all cases, relieving police officer witnesses and trial judges of the inconsistent duty of also acting as prosecutors. Nine states generally don't provide public prosecutors in traffic cases, and the other states provide them in some localities or special cases. All persons charged with moving traffic violations must appear in person before traffic courts in 18 states, but they are not generally required to do so in 20 states. In other states they must appear except for certain violations which are handled otherwise. In only 8 states are traffic court judges and justices of the peace required to be members of the bar.

Judges of traffic courts are selected on a nonpartisan basis in 14 states, but they are not in 21 states. Other states select judges on a nonpartisan basis in some courts. Six states have uniform fines and penalties for each offense, and 21 states report a trend toward achieving them. Courts can suspend or revoke a driver's license in 23 states, and judges have limited authority to do so in 11 states. Other states give the courts no such authority, 12 of them vesting it in a state authority other than the courts.

The Institute of Judicial Administration, which published the report, was established in 1952 as a non-profit corporation.

1952 Night Traffic Takes 20,520 Lives

TEN thousand lives, 350,000 injured people and an economic loss of $975,000,000 is the nation's 1952 toll from tolerating horse-and-buggy street lighting.

The National Street and Traffic Safety Lighting Bureau says the light necessary to eliminate this death, injury and destruction would cost approximately half of one year's economic loss. Adequate, safe street lighting, the Bureau says, ranges between $2.50 and $4.50 per capita per year, depending upon the type of street and traffic volume.

Speeder "Slowdown" Cuts "Summer Death Bulge"

THE experimental 11-state summer highway "slowdown" aimed at speeders throughout the entire northeastern area has definitely eliminated the anticipated "summer bulge" in highway deaths, the program's sponsors declare. Preliminary accident reports show a drop in traffic fatalities during the second month of the region's speed control program.

Fatalities in the region from Maine to Maryland had increased 10 percent during the first 5 months

of 1953 over the same 1952 period. In the country as a whole during the first half of this year a 3 percent rise in the traffic death toll was reported. Had the death trend in the northeastern states continued unchecked, 100 fatalities more than in 1952 would have been the increased toll during the summer. Largely as a result of the "Slow Down and Live" program, according to James R. Barrett, chairman of the sponsoring group, the Northeastern State Safety Coordinators, the actual toll is now approximately 125 below the expected figure.

Further indications of the effectiveness of the "slowdown" program in saving lives and reducing accidents were cited by Mr. Barrett in the experience of the region's two largest states, New York and Pennsylvania. The number of persons injured in New York state traffic accidents in July dropped 625, from 9,196 last year to 8,571 this year. Property damage accidents likewise declined from 16,652 to 15,222, a reduction of 1,430. Pennsylvania reported that 94 traffic deaths during June was the lowest number experienced in that state for any one month during the last 8 years. Compared with 124 killed in June 1952, it represented a saving of 30 lives in that state alone in one month.

New Jersey reported the greatest decline in deaths in July, 22 fewer than in July 1952. Pennsylvania reported a drop of 10 deaths and Maryland fatalities declined nine. Massachusetts, Connecticut and Vermont each reported death tolls one lower than in July 1952. Largest July increases were nine in New Hampshire and six in Maine. Three other states, Delaware, New York and Rhode Island, each reported an increase of one in their fatality tolls for the month, compared with last year.

Short Traffic Courses Offered For Police

SHORT course training in planning and procedures for directing traffic will be offered for police

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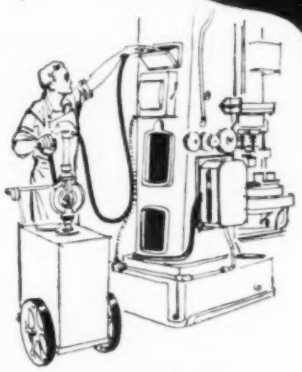

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Look inside a Tokheim and you'll see why this amazing double-action pump is tops with so many manufacturers. Its rugged, economical diaphragm construction means low original cost, minimum maintenance. Thousands in daily use giving dependable service-free performance. Eliminates slippery floors. Reduces fire and accident hazards. Delivers up to 20 gallons per minute. Offered with optional parts for handling a wide range of liquids. Available with hose or spout outlets for drum, skid tank or underground installations. Call your dealer or your Tokheim representative. Do it soon!

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officers for the first time this fall at the Traffic Institute of Northwestern University, Franklin M. Kreml, Institute director, has announced.

The police job of preventing traffic congestion and facilitating traffic movement as well as the ways in which police aid and supplement the work of traffic engineering, will be stressed in the two-week course to be held from November 30 to December 11. The new course, along with one in traffic law for police, to be held November 2 to 20, and one in chemical tests for intoxication, scheduled for December 14 to 18, is part of a new training program on which the Traffic Institute has been working for several years, according to Mr. Kreml.

"This new training program," he says, will make it possible for police departments to give officers whom they cannot send for a full academic-year (9 months) of training in traffic police administration a chance to get specialized training in certain technical subjects.

The Traffic Institute's police courses now include: training for police instructors, police traffic records systems, accident investigation, traffic law for police, introduction to police traffic supervision, traffic law enforcement, chemical tests for intoxication, public information programs for police, and the 9-month traffic police administration course.

School-Trained Drivers Soon To Be 5 Million

BY NEXT spring the nation will have at least 5 million young men and women who have been trained in high school to be safe drivers, the Association of Casualty and Surety Companies announces, in awarding top honors to Oklahoma, Delaware and Massachusetts, among 23 states named as recipients of plaques in its Sixth Annual Driver Education Award Program.

If the present rate of growth of the driver education movement is maintained, the Association adds, within 4 years more than a million high school students will be enrolled annually in these courses, starting with the 1956–57 academic term. Nearly 800,000 students took the safe driving courses in 8,653 public high schools during the 1952–53 term ended last June, the highest on record. This represents an enrollment increase of about 61,000 over the previous school year.

Oklahoma achieved 169.8 points out of a potential 200 under the point scoring system now used in the driver education award program to give equal credit to the quality of a state's courses and to increases in the number of schools offering the courses and students taking them. Second highest score was Delaware's 165.9, with Massachusetts next with 165.5.

(Continued on next page)

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No. 351—An improved **Reece "Hot Foot" Sandal** with two strong sole leather hinges provides real insulation for those hot jobs. Straps on quickly over any shoe.

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No. X175-CG-Men's No. X173-CG-Women's for BROKEN FOOT BONES—CRUSHED TOES
SMOOTHLY finished WOOD SOLE with AIRFOAM insole acts as splint.
Keeps injured foot immobile.
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SIZES — SMALL-MEDIUM-LARGE

See these and many other styles
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STRONG STEEL TOE

No. 504-S—Double duty for safety with this **Reece "Perfect Rocker" Wooden Sole and Steel Toe Shoe . . .** made with durable leather uppers.

Keeps the feet at body temperature regardless of room or floor conditions.

Sizes—5–13

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SAFETY LIKE THIS IS NO ACCIDENT!

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This industrial weight, fully Neoprene Coated knit-wrist glove leads all sales.

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MAKES GRANET WORK GLOVES
SAFE • PROTECTIVE • DURABLE • COMFORTABLE

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Gauntlet style emerald green Dynagluv, fully plastic coated and liquid proof.

Tough, safe, sturdy work gloves by Granet are resistant to grease, oil, chemicals and solvents. They are quality constructed throughout.

WATERPROOF NEOPRENE COATED GLOVES are designed especially for handling strong chemicals. Highly resistant to cutting or snagging. Our foolproof vulcanizing method is monitored by supersensitive automatic controls. It is no accident that safety is manufactured right into Granet Neoprene Coated Gloves.

COLORFUL PLASTIC COATED DYNAGLUVS are unexcelled for handling abrasive materials such as sand, bricks, cement, etc. They will stand severe abuse. What's more, their special polyvinyl resin coating is completely waterproof. This makes the fully coated styles good for work with chemicals (wet or dry), oils, greases, solutions, etc.

All Granet Work Gloves have fully curved fingers and thumbs. They fit better, are more comfortable and wear longer. Available in Knitwrists, Bandtops and Gauntlets, fully coated or palm coated for ventilation. There's a Granet Glove for every industrial need. Investigate now.

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Besides the highest ranking given these 3 states which received the Association's Award of Excellence for scores above 165 points, 7 others were named as recipients of its Award of Honor and 13 were designated by the board of judges to receive the Award of Merit. Second honors were attained under the program's point system by New York, Minnesota, California, Illinois, Wisconsin, Virginia and New Jersey. The Merit Award goes to the following states, Ohio, Pennsylvania, Nevada, Connecticut, New Mexico, Arizona, West Virginia, Washington, North Dakota, Utah, Vermont, Indiana and Oregon.

"The rate of growth of the driver education program among students in the nation's high schools has slowed down to about half what it was four years ago," said Thomas N. Boate, manager of the accident prevention department, "but during the last two academic terms about 60,000 students were added each year. Should this rate of expansion be continued, the number of boys and girls taking the courses every year should increase to more than 1,000,000 annually by 1957."

Mr. Boate emphasized that nearly 800,000 students in driver education classes means that only half of the eligible students were enrolled in schools offering driver education.

"Driver education is still a long way from its goal of giving every high school student in the nation a course which will help him understand the serious role of driving an automobile which can kill and maim and cause great damage on the highways if it is improperly handled," said Mr. Boate.

Plaques honoring the winning states for achievements in driver education during the last school term will be presented to governors and educational officials.

Mickey Mouse Tackles Traffic Safety Problem

MICKEY MOUSE and all his friends have gone to war . . . on the traffic problem. A 7-minute, technicolor film, called "Motor Mania," has been produced by the Disney studios. Available in 16mm for use by schools, industrial organizations, civic groups and traffic enforcement officers, the film can be obtained from 80 rental libraries across the country by interested users for a small rental fee.

The powerful spotlight of humor is cast on the two basic causes of the national traffic problem . . . the average motorist and the average pedestrian. Working from factual research provided by police departments and other safety groups, the cartoonists display in caricature the miraculous change that comes over the average individual the moment he finds himself behind the steering wheel of one of the finest "weapons of destruction" . . . the modern automobile.

YOU HAVE TO GO *underfoot . . .*

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The polish on your floors may be inviting expensive damage suits. Because walking feet make most polishes slippery as a skating rink.

One building averaged 2 liability claims a week. With LEGGE Maintenance they have had *no slip-falls, no claims.* LEGGE Safety Polishes go up to 75% beyond Underwriters' Laboratories requirements for slip-resistance. Buffing and walking actually *increase* slip-resistance.

BEWARE OF CURE-ALLS: There's more to it than just using a product labeled "slip-resistant". *No two floors are alike.* That's why a LEGGE Safety Engineer examines your floors for age, composition, area, condition and traffic load before specifying the materials that suit your needs *alone.*

Discover how *you* can end the threat of law suits while actually cutting your maintenance costs *way down.* Write today for the informative, Free booklet, "Mr. Higby Learned about Floor Safety . . . the Hard Way!"

CELEBRATING 25 YEARS OF UNDERFOOT SAFETY

YOU'RE SAFE WHEN YOU HAVE LEGGE TO STAND ON

LEGGE SYSTEM of Safety Floor Maintenance

Walter G. LEGGE Company, Inc., Dept. F-10, 101 Park Ave., New York 17, N. Y. Branch offices in principal cities.

(Use Key # K-52 on Inquiry Card on page 117)

SAFETY ACHIEVEMENTS

THE Lammot du Pont Safety Plaque Awards, given annually by the Manufacturing Chemists' Association, Inc. to the 2 chemical companies showing greatest improvement in plant safety over a 5 year period, have been won this year by the A. R. Maas Division of the Victor Chemical Works, South Gate, California, and the Naugatuck Chemical Division of United States Rubber Co., New York.

Naugatuck was the winner among chemical manufacturers with more than 2 million man-hours exposure. The Division's two plants located at Naugatuck, Conn., operated throughout 1952 without a lost-time acciden. The A. R. Maas Division of Victor had the best record among firms with less than 2 million man-hours exposure. Runner-ups in the two divisions respectively were Tar Products Division, Koppers Co., Inc. and Jefferson Chemical Co., Inc.

FIVE separate awards for on-the-job safety have been given the Philadelphia & Reading Coal & Iron Company in recent ceremonies. The Joseph A. Holmes Safety Association has honored 5 operational sections of the company for no fatal accident records.

The Locust Summit Central Breaker was honored "for having no fatalities in the preparation and shipping of 19,534,364 tons of coal, from June 5, 1945 to January 31, 1953, a total of 3,626,476 man-hours."

The Oak Hill Colliery was commended for "having no fatalities from June 4, 1948 to February 28, 1953, a total of 3,054,749 man-hours while producing 2,906,389 tons of coal."

Newkirk Colliery received an award "for having no fatalities from October 15, 1945 to February 15, 1953, a total of 2,575,389 man-hours for an average of 234 employees."

Maple Hill colliery was cited "for having no fatalities from July 25, 1951 to February 15, 1953, a total of 2,344,832 man-hours for an average of 1,095 employees."

Shen-Penn Stripping was honored "for having no fatalities in coal stripping operations from July, 1946 to February 15, 1953, and continuing, a total of 4,298,772 man-hours."

THE best safety record in the history of the distilling industry, 2,691,211 manhours' operation without a lost-time accident, has been set by The Albert B. Blanton distillery of Schenley Industries, Inc. It surpasses the previous record of 2,686,399 manhours credited to a National Distillers' plant in Louisville, Kentucky.

The distillery started its record-shattering span on August 8, 1951, and each month since then averaged over 100,000 hours without a single mishap.

AN "Award of Merit," in recognition of its industrial safety record, has been presented to the Crosse & Blackwell Company, Baltimore, Maryland by its insurance carrier.

The record which earned the award started March 14, 1952 and continued through Febraury 6, 1953, during which time the company's employees worked 1,008,721 man-hours without a disabling injury.

In addition to this special record, the employees of the company have earned 5 awards for frequency reduction of accidents from the National Safety Council, and have also

received the first "Award of Honor" presented to a food-processing plant.

Management believes that employee cooperation, the extensive first aid training program and safety indoctrination of new workers have played major roles in accident reduction.

THE Indianapolis plant of the tire division, United States Rubber Co., has won first place in the company's first annual fire prevention contest competing against 15 of the company's plants throughout the country.

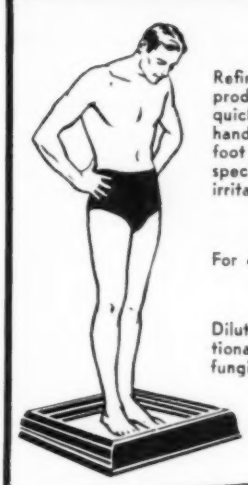
The plant, which employs approximately 1600 people and manufactures inner tubes, bicycle tires, and tire recapping materials, had only 2 small fires during 1952 with a total property damage of only 38 dollars.

GENERAL ELECTRIC'S Radiological Sciences department at the Hanford plutonium manufacturing plant in Eastern Washington has completed 1000 days without a major injury. The department has about 375 employees and this safety record amounts to over 2 million exposure hours without a lost time injury.

About 35 per cent of the employees are employed in laboratories where they work with chemicals and radioactive materials. Another group in the department, Regional Survey, does extensive traveling during the year taking samples of air, soil, vegetation, and other non-biological substance for the department's monitoring program. Other members of the department are concerned with monitoring production areas with radiation detection instruments.

AN Award of Honor of the National Safety Council has been presented to construction workers of the Blaw-Knox Company of Pittsburgh, Pa. The award recognizes the unusual achievement of working 4,112,095 man-hours without a lost time accident. This interval extended from December 30, 1952 to May 25, 1953. This is equivalent to 100 men working 20 years without a lost-time accident.

COMPLETE PROTECTION AGAINST
ATHLETE'S FOOT
at moderate cost!



IMPROVED ALTA-CO POWDER

Refinements and improvements in essential ingredients and production methods make Dolge's famed ALTA-CO more quickly soluble, more agreeable generally and better to handle. Dissolved economically in water for the all-important foot bath, ALTA-CO kills *in less than a minute* all different species of fungi commonly found in Athlete's Foot. Non-irritating; harmless to towels.

ALTA-CO FOOT POWDER

For dusting feet after shower or other exposure to moisture.

H.D. FUNGICIDE FLOOR WASH

Diluted 1 to 300 in water, this powerful wash provides additional protection against Athlete's Foot on surfaces where fungi are commonly found.

Ask your DOLGE SERVICE MAN about money-saving offer on the DOLGE FOOT TUB.

FOR
FREE SANITARY SURVEY
OF YOUR PREMISES
SEE YOUR DOLGE SERVICE MAN

dependable
DOLGE
WESTPORT, CONNECTICUT

(For further details, use Key # K-53 on free Inquiry Card on page 117)

FLEXIDUCT
FOR OVER-FLOOR WIRING

Safe • Efficient • Economical

New rubber duct already proved by hundreds of users offers complete protection against all usual hazards. At the same time, it is non-obstructive and stumble-proof.

Can be applied quickly, easily with special cement, eliminating use of screws or fasteners. Adheres firmly, yet can be removed without difficulty. Standard size is 2 3/4" at base with apex of 7/16", accommodating two to eight conductors. Riser and angle fittings, and special large size also available.

Get maximum safety and wire protection at less cost. Write Dept. 10 for complete information.

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1252 Kinnear Road • Columbus 8, Ohio

Mfg. by: WINDERS & GEIST, Inc.
2219 NO. COTNER BLVD. LINCOLN, NEBRASKA

(For further details, use Key # K-54 on free Inquiry Card on page 117)

ACME....

the Only Gas Mask with the "PICTURE WINDOWS"

You never have that "jammed-in" feeling, wearing the Acme Full-Vision Gas Mask. Its patented, larger lenses are like picture windows, giving you full natural vision for that safe, unconfined feeling. When you walk, you can actually see your toes without bobbing your head. This factor alone makes Acme outstanding among gas masks . . . well worth looking into.

Write for the complete story on Acme Gas Masks for all occupational hazards.

ACME PROTECTION EQUIPMENT COMPANY

3037 West Lake Street, CHICAGO 12, ILLINOIS

(Use Key # K-55 on Inquiry Card on page 117)

Award Emblems

SERVICE

Recognize your veteran employees—increase loyalty—reduce labor turnover. Show your appreciation for years of loyal service with a Metal Arts Service Award Emblem.

SAFETY

Fewer Accidents mean more manpower, less lost time. Encourage safety with our Safety Emblems. Emblems can be applied to tie clasps, money clips, lighters, etc.

QUOTA CLUB

Start a Quota Club and watch your sales increase. Your salesmen will be proud to earn the right to wear an emblem with your company name.

SUGGESTION

Augment your cash award with a distinctive emblem. Promote competition among your workers. Increase labor, material and method savings.

Advertising Specialties
Name Plates
Plaques

WRITE FOR OUR BROCHURES

METAL ARTS CO., Inc.

742 Portland Ave., Dept. 13, Rochester 21, N.Y.

Offices in Seattle, San Francisco, Los Angeles, Washington, D.C., Philadelphia, New York City

(Use Key # K-56 on Inquiry Card on page 117)

INSIDE THE TRADE

Safety Engineer Appointed

THE recent appointment of Edward J. Walsh as safety engineer at the Grasselli plant of General Aniline & Film Corporation, is announced by E. R. Swint, personnel manager of the dyestuffs and chemical works.

A graduate of Villanova College where he received a degree in civil engineering, Mr. Walsh also attended Louisville University. He has previously served as a fire protection engineer for the National Board of Fire Underwriters and prior to joining General Aniline he was safety engineer at Picatinny Arsenal, Dover, N. J.

New Section Gets Manager

MANAGER of the newly formed Public Utilities Section of Johns-Manville Corporation is Edward D. Flavin it is announced by J. A. O'Brien, Vice President and General Manager of the Company's Industrial Products Division.

Mr. Flavin attended Syracuse University and served as an engineer with several corporations prior to joining Johns-Manville in 1929 as a salesman in the Syracuse District. He was transferred to New York City as Assistant District Manager in January, 1939. Since 1946, he has been District Manager of the New York District.

Floor Machine Manufacturer Appoints

BREUER Electric Mfg. Co., Chicago manufacturer of floor maintenance equipment, has announced the appointment of Fred A. Small as regional sales manager in southeastern United States.

Mr. Small has been engaged in distribution and sales in Detroit, Michigan. In his new capacity he will direct the company's sales operations for their line of floor machines, vacuum cleaners and portable electric blowers in Alabama, Florida, Georgia, North and South Carolina and eastern Tennessee.

Push-button Extinguisher Wins Prize

THE Grand Prize for the product contributing most to home safety goes this year to Pyrene Manufacturing Company for its development of the push-button type, small, home extinguisher. At the annual Home Safety Awards dinner Julien Elfenbein, chairman of the committee of judges, presented the award to Solomon R. Baker, president of Pyrene.

Company Moves to New Plant

SPEEDWAYS Conveyors, manufacturers of materials handling equipment, has moved into a new location at 202–208 Rhode Island Street, Buffalo 13. Covering approximately 50,000 square feet, this new location provides twice as much space as the plant recently vacated.

New Color for Safety Cans

A NEW color, flame red, now features Justrite Safety Cans in all sizes, it is announced by the Justrite Manufacturing Company of Chicago, manufacturer of safety cans, oily waste cans, portable electric lights, hand lanterns and other safety products.

Factors in the selection of the new color were instant identification, high visibility and sharp contrast to fire fighting apparatus. The new finish eliminates any possible confusion between regular fire fighting equipment and the Justrite cans which, in most cases, are used for flammable liquids. The flame red color complies with the new "Safety

Color Code" developed to provide instant identification of safety equipment and safety hazards. Its adoption has been suggested for several years by safety engineering groups and sections of the Bureau of Mines.

Vice-President Appointed

APPOINTMENT of Carmen V. Starrantino as vice president has been announced by Walter G. Legge Company, Inc. Mr. Starrantino has been with the company since 1935, with the exception of 4 years' service in the U. S. Air Force. Since then, he has been General Manager of the company, which manufactures slip-resistant floor polishes.

New Eastern Sales Manager

A. M. ANDERSON, general sales manager, Breuer Electric Mfg. Co., Chicago, announces the appointment of C. D. Hoover, Oakland, New Jersey, as the regional sales manager for Tornado equipment in New England, upper New York State and Pennsylvania outside of Philadelphia.

New Sales-Service Representative

THE John Hewson Company announces the appointment of Thomas A. Collier Company, 1123 Western Savings Front Building, Philadelphia, Pennsylvania, as its representative for sales, field application and servicing of its line of insulation test sets and high voltage power supplies, static control systems and master static alarm systems.

Floor Duct Distributor Appointed

THE Buckeye Telephone & Supply Co., 1250 Kinnear Road, Columbus, Ohio has been selected as eastern distributor covering territory east of the Mississippi River by Winders & Geist, Inc., makers of Flexiduct.

"Fire-Chief Finished"

WELDING CURTAINS—SALVAGE COVERS

to confine the welding operation to a given area

used to protect machinery, and other equipment from water, dust and snow.

MADE OF CANVAS

impregnated with Hooper's Fire Chief treatment under their patent which carries the Underwriters' Laboratory seal.

A. Smith & Son Inc.

Established Eighteen Hundred Sixty-Seven

MANUFACTURERS OF REEVES STRETCHER

Ridge Ave. at Green — Philadelphia 23

"If It's Made of Canvas, We Make It"

(For further details, use Key # K-57 on free Inquiry Card on page 117)

a new high in... Safety

Dayton Safety Ladders, with exclusive "safety level" working platform, make high jobs "ground safe". Check the "big 6" features that make Dayton your best buy:

1. Rail-guarded "Safety Level" platform.
2. Locks in place automatically.
3. Rubber safety shoes.
4. Light weight—great strength.
5. Economically priced.
6. Complete size range 3' to 16' in height (to platform).

MAIL TODAY

Dayton Safety Ladder Co., Dept. G
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Gentlemen: Please send free literature, prices, etc. on your Model A Safety Ladder.

Name_____

Company_____

Address_____

City_____ State_____

Dayton safety ladder co.

2339 Gilbert Ave., Cincinnati, Ohio

In Canada—Safety Supply Co.—Toronto

(For further details, use Key # K-58 on free Inquiry Card on page 117)

Bump that assures positive results

When fire strikes, seconds count . . . your fire extinguishers must be the right type and function properly from the very start . . . failure means serious losses.

The growing popularity of the highly effective powdered dry chemical fire extinguishing agent may be hampered by a drawback . . . settling or packing can occur after a lapse of time. However, with C-O-TWO Dry Chemical Type Fire Extinguishers there's no chance of this happening.

The exclusive inverting and bumping design of C-O-TWO Dry Chemical Type Fire Extinguishers provides mechanical breakage of the dry chemical by shifting its position in the cylinder. This outstanding mechanical breakage, plus continuous inert gas pressured agitation or fluffing of the skillfully blended free flowing dry chemical, guarantee lasting, foolproof fire protection.

No other brand on the market today gives you this extra margin for positive results. Inverting and bumping is only one of many unique design advantages that make C-O-TWO Dry Chemical Type Fire Extinguishers your best buy for killing flammable liquid and electrical fires, as well as surface fires involving ordinary combustible materials.

With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound . . . blankets fire instantly. Sizes range all the way from 4 to 150 pounds capacity . . . all fully approved by the Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Government Bureaus.

Act now for complete free information on these top quality, sure-acting fire extinguishers. Remember fire doesn't wait . . . get the facts today!

C-O-TWO

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

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Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

(For further details, use Key # K-59 on free Inquiry Card on page 117)

The Fire Front

July Fire Losses Soar

ESTIMATED fire losses in the United States during July amounted to $74,938,000, it is reported by the National Board of Fire Underwriters.

According to Lewis A. Vincent, NBFU's general manager, this $74,938,000 loss represents an increase of 21.5 percent over losses of $61,675,000 reported for July, 1952, and an increase of 10.8 percent over losses of $67,644,000 for June (1953). Losses for the first 7 months of 1953 now total $507,019,000, an increase of 8.7 percent over the first 7 months of 1952, when they amounted to $466,328,000.

These estimated losses include an allowance for uninsured and unreported losses.

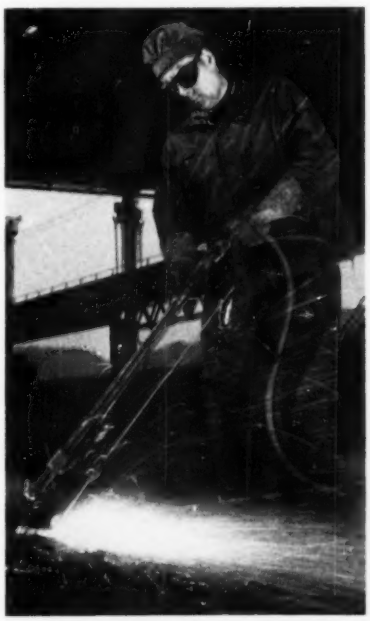
4500° F. Won't Ignite Flameproofed Clothing

A SPECIAL chemical treatment for clothing which will not burst into flame even when exposed to the intense heat of a blow-torch has reached full development. The flameproofing compound, when applied to cotton cloth, provides a durable finish impervious to combustion even at temperatures up to 4500° F. The cloth, of which several million yards have been in actual use, is described as the first finish of its kind which may be laundered repeatedly without losing its fire-retardant properties.

An executive of the company which developed the compound after nearly 20 years of research, explains that safety garments so flameproofed have been "road-tested" for the past 5 years at the Pittsburgh Works of the Jones & Laughlin Steel Corporation with "excellent results." They are now being used in other steel mills and industries where fire and intense heat are working factors.

Many Uses

The process is applicable to a variety of other uses in addition to safety clothing, including cotton bed



ticking and mattress covers, some upholstery and drapery fabrics and "certain other items which annually run up huge fire losses" resulting from dropped cigarettes, lighted matches and similar careless or accidental causes.

The steel industry was selected as a proving ground in 1948 because, although among the 5 "safest" industries in America, it has certain working areas of intense heat and men are subject to serious burns.

"The record to date has proved the flameproofed cotton garments can withstand terrific heat and stand up under the most savage kind of working conditions while affording a greater amount of protection than had previously been possible with untreated cloth. Men have been showered with hot metal and have even been caught in slag pit explosions without suffering body burns while wearing the protective clothing. Furthermore, the clothing can be laundered repeatedly, both service and laboratory tests showing the finish will last the life of the garment," according to the executive.

Compound Impregnated in Cloth

The fireproofing compound is impregnated into the fiber of the cloth during the final finishing process in a textile mill. Only standard finishing equipment is required. The impregnant does not noticeably affect the porosity of the cloth and it adds toughness by increasing the tensile strength and abrasion resistance. In actual service, the treated cotton garments have been outwearing conventional wool and other untreated fibers by as much as 5 times. There have been no cases of dermatitis reported either from handling the finish or from wearing the treated clothing.

A special knee-length coat in addition to being flameproofed, also has an aluminum-foil inner-liner which serves to reflect a great amount of heat away from the body. Some tests are said to show as high

(Continued on page 105)

FEATURE

Second of a feature series on Fire Protection. The next article will appear in the November issue.

By J. A. BONO

Executive Engineer

Underwriters' Laboratories, Inc.

How to Put

Carbon dioxide is discharged at gasoline fire's base for maximum suffocating effect.

CLASS A fires, as defined by the National Fire Protection Association, are those in ordinary combustible materials in which the quenching and cooling effects of quantities of water, or solutions containing large percentages of water, are of prime importance. Similarly, Class B fires are defined as fires in flammable liquids, greases, etc., where a blanketing effect is essential. Practically all fires which occur fall into these two general categories.

Even those fires which occur in metals such as magnesium and sodium, or those which have their origin in faulty electrical equipment, eventually involve material of the Class A or Class B type. The practice in fire protection circles is to refer to the materials in which Class A fires occur, such as wood, paper, excelsior, rubbish, trash, cloth and like materials as Class A materials. These latter materials are involved in about 95 percent of all fires. Similarly, flammable liquids such as gasoline, oil and greases are referred to as Class B material.

CLASS A FIRES

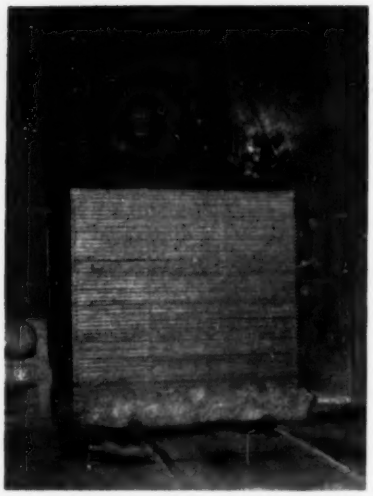
The primary function in the extinguishment of Class A fires is heat control, which is the oldest and most widely used of fire-fighting methods. The object is to lower the temperature of the burning material below the ignition and vaporization points. Therefore, the difficulty in extinguishing Class A fires can often be related to the depth to which the fire has penetrated the material. Examples of the two extremes are the surface-type fires which flash over cotton lint and deeply-seated fires in cotton bales.

Water has proven to be the best agent for both deep-seated and flash fires. It has a tremendous capacity for absorbing heat; it readily makes contact with most solids; and it is

Extinguishing fire with carbon dioxide units depends upon a close approach to the fire. Note technician's reaction to heat and flames.

t Out Class A and B Fires

Foam extinguisher is discharged toward back wall of tub in Class B fire test to permit foam to flow back over surface of flammable liquid.



Fire test of extinguisher uses wood strips on board support. Gasoline and excelsior provide fire impetus and fuel.

cheap and readily available. A high percentage of vaporization is the key to the successful employment of water as a controlling and extinguishing agent. Water which fails to vaporize contributes little toward extinguishment; it is the water which is converted into steam that extinguishes the fire. This factor is so important that every effort should be made to obtain a high percentage of vaporization in combating both interior and exterior fires. Wherever water is employed as a controlling and extinguishing agent, it should be applied in a form and at a rate which will assure the highest percentage of vaporization that can be attained under existing circumstances.

Up to the present time, water is the only answer to the problem of controlling and extinguishing major fires involving buildings and other ordinary solid combustibles; therefore, the only road to greater extinguishing efficiency is through increasing the percentage of vaporization. Recent developments in sprinkler design and the increased consideration of the indirect method of attack using the vaporization and expansion of water particles from fog nozzles to absorb and transfer heat are indicative of future trends.

Extinguishment of Class A Fires

Most Class A fires have a relatively long incipient stage compared with Class B fires. This places greater emphasis on the control of incipient fires with first aid fire extinguishers. Underwriters' Laboratories, Inc. lists extinguishers intended for use on Class A fires and recognition of this listing is indicated by a label on the extinguisher. This manifest bears a classification A or A followed by various numerals.

The 2½-gallon soda-acid extinguisher is one of the most common Class A extinguishers of the hand type. It is operated by inverting, which produces a reaction of sodium bicarbonate solution with concentrated sulphuric acid. This

Picture shows original ignition after sprinkling wood with gasoline and setting fire to excelsior at base of wall to give fire impetus.

reaction results in the formation of carbon dioxide pressure which expels the liquid from the extinguisher. The reaction is expressed in the following equation: $2NaHCO_3 + H_2SO_4 = NA2SO_4 + 2H2O + 2CO_2$. The soda-acid extinguisher can discharge an accurate stream for a horizontal distance of 30 to 50 feet.

The pump-tank type extinguisher can readily be used for incipient Class A fires. It consists of a water container with a double-acting pump. Operation of the pump discharges a stream for a horizontal distance of approximately 40 feet. Although the stream may not be as accurate as a soda-acid type extinguisher, this unit has the advantages of being simple in design and requiring a minimum of maintenance. The extinguisher can also be charged with an antifreeze solution which will resist freezing down to —40 degrees.

The cartridge-operated extinguisher is gaining in prominence among first aid fire appliances for Class A fires. This unit consists of a container with a liquid solution, either water or antifreeze, which is expelled by carbon dioxide gas stored in a cartridge inside of the container. The cartridge is punctured either by inverting the unit and bumping it on the floor or by a lever-operated puncture assembly. The discharge characteristics of the 2½-gallon extinguisher are quite similar to the soda-acid type. The cartridge-operated extinguisher can be charged with a loaded stream solution. This antifreeze solution is a special solution containing certain alkali metal salts. This special salt solution has an effect on fire that is unlike any other extinguishing agent. On Class A fires, the stream extinguishes the flame rather suddenly; and there is a pronounced fire-proofing effect, since flash back is materially retarded.

The foam-type extinguisher is also used for Class A fires. The chemicals used are bicarbonate of soda and a foam-stabilizing agent dissolved in water for the outer com-

Test strips 5 minutes after ignition. To test permanency of extinguishment wood will be charred before use of extinguisher.

PROTECTOSEAL

Builds a COMPLETE LINE of APPROVED SAFETY EQUIPMENT FOR THE

Storage, Transfer and Use of Flammable Liquids!

STORAGE

CONSERVATION VENTS AND FLAME ARRESTERS
provide pressure and vacuum relief, and breathing is retarded to reduce evaporation. Flame Arresters prevent passage of flame to interiors. All aluminum construction, or special materials on order. Approved and listed by Underwriter's Laboratories and Associated Factory Mutual Laboratories.

DRUM BUNG FITTING
a combination fill and vent which provides vacuum and automatic pressure relief, and guards against explosion under fire conditions. Double perforated metal baffle extends into drum and permits refilling without danger of interior fire.

SELF-CLOSING AUTOMATIC FAUCET
has flame arrester within the body at outlet; valve is outside body where it is not distorted by excessive pressure. Standard gaskets are Buna N, Neoprene or Thiokol; other materials upon request.

TRANSFER

SAFETY TRANSFER PUMP

Designed for complete protection against explosion and fire hazards the PROTECTOSEAL Transfer Pump has three flame arresters built into it: at the spout, above the bung adapter and at the strainer inlet within the drum. It also provides for vent and pressure relief through protected openings.

The pump is self-priming and is constructed of special aluminum alloy with a brass telescopic tube. It is quickly and easily attached to drums with bung openings as small as ¾" by hand swivel grip connectors and the telescopic tube permits pumping from either the side or end openings of 30 gallon and 55 gallon drums.

PLANT USE

A—SAFETY CANS—Double concentric fire baffle inside base of spout. Spring loaded cap makes tight closure; provides pressure relief. Explosion-proof and leak-proof.

B—PLUNGER CANS—When plunger is depressed, the fluid rises into dasher to moisten swab. Excess liquid flows back into body. Dasher is a fire-protective baffle and unit is self-extinguishing.

C—WASH-DIP TANKS
Sturdy, square, electrically seam-welded design with lugs above liquid level to hold basket for draining. Top has full-length hinge and is equipped with a fusible link which drops cover automatically in case of fire.

D—OILY WASTE CAN
Tight, seam-welded body with snug fitting cover which closes automatically to smother fire. Cover opens wide with slight foot pressure on full width treadle.

THE PROTECTOSEAL COMPANY
1930 So. WESTERN AVENUE, CHICAGO 8, ILL.

Please send complete catalogs and price lists on the types of PROTECTOSEAL Safety Equipment checked:

☐ Bulk and Drum Storage ☐ Transfer Pump
☐ Safety Production Cans for Plant Use

Name_____ Title_____
Company_____
Address_____
City_____ Zone_____ State_____

(For further details, use Key # K-64 on free Inquiry Card on page 117)

partment, and aluminum sulphate dissolved in water for the inner cylinder. The reaction between these chemicals is expressed as follows: $6NaHCO_3 + AL_2(SO_4) 3.18H_2O = 6CO_2 + 3Na_2SO_4 +$

Large gasoline fire in test pan burns vigorously as test operator prepares to attack it with dry-chemical wheeled tank.

$2Al(oH)_3 + 18H_2O$. Because of the water involved as shown in the equation, these units are suitable for use on Class A fires. The penetrating action of foam, which resembles a soapy bubble mixture, has been questioned and is probably less than water. Foam, therefore, may be put to better use on surface Class A fires rather than on deep-seated types.

It should, of course, be emphasized that extinguishing is limited by the quantity of agent available. Indicative of the extent of the extinguishment potential of the normal 2½-gallon water extinguishers are the standard fire tests conducted by Underwriters' Laboratories, Inc.

In one such test, a solid square plane approximately 10 by 10 feet in dimension is constructed with yellow pine flooring pieces as a backing and support for the lighter material which composes, in large part, the fuel for the fire test. This lighter material consists of firring strips 1 by 1 inch, extending from side to side of the 10-ft. square panel. They are placed approximately ¾ of an inch apart and 2 layers are used. With impetus given to the fire intensity by 2 gallons of fuel oil sprinkled uniformly over the entire area and 4 separate windrows of excelsior, 5 pounds each, placed directly against the base of the test sample at periodic intervals, the test sample burns fiercely approximately 5 minutes after starting.

A more deep-seated type of fire test for a 2½-gallon water extinguisher is the 4- by 8-foot excelsior fire in which 12 pounds of excelsior is loosely and evenly spread over an area 4 by 8 feet, packed down to a 1-foot depth. With a fuse of gasoline to ignite the front edge, this fire is normally attacked with the extinguisher when the flames reach the middle of the bed.

The 2½-gallon Class A-1 extinguisher (including the soda-acid, foam, pump-tank, and cartridge-operated units) is required to extinguish both of these test samples.

Combined Agents

A relatively unexplored field of fire attack methods, is the combined

Dry chemical cloud formation shields operator from heat and flames as he moves toward fire, using 350-pound extinguisher.

use of Class B agents for quick knock-down of flames and Class A extinguishers for clean-up operations. Also being examined is the use of Class B extinguishers as the ***only*** agent for surface Class A fires. The Factory Mutual Bulletin of Loss Prevention No. 12.75 states "Dry chemical gas-actuated extinguishers backed up with water spray from a small hose provide the most effective combination of first aid fire equipment for quick control and extinguishment of cotton process fires." This article points out that the extinguishing effect of the dry chemical is due to the fire-retardant powder-coating on the fibers. This light deposit prevents rapid flame spread and permits quick control of a surface fire. Figures taken from this bulletin indicate that as much as 3000 square feet can be covered by a 15- or 20-pound extinguisher. After the surface fire has been extinguished by dry chemical, slow residue smoldering may persist, when the cotton material is deep. For this reason, it is necessary to have water in some form, preferably spray, for mopping up purposes. Opener and picker rooms in the textile mills are probably the most apt locations for Class B extinguishers for use on surface-type Class A fires.

In addition, some fire chiefs are reporting remarkable success in the use of dry chemical on brush fires. Here again, flame knock-down is of primary importance and this is achieved quite rapidly with the dry chemical. In a series of tests conducted at Underwriters' Laboratories, Inc., the quick flame knock-down and retardant effect of the dry chemical was noted. The average flame knock-down time using a dry chemical extinguisher on a 7- by 7-foot wood panel fire was 3 times as fast as with the soda-acid type extinguisher. However, in this wood panel fire, in which the preburn extends for a long enough time to char the wood strips considerably, very seldom was total extinguishment obtained with the dry chemical. By utilizing the quick flame knock-down characteristic of the

Fire is driven ahead by cloud of dry chemical until operator can reach base of fire and complete extinguishment.

dry chemical and the mopping up with Class A type extinguishers, rapid extinguishment would have been possible.

Very little has been developed

decrease health hazards

increase cleaning and degreasing efficiency

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Recommended by Safety Engineers and Industrial Hygienists.

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1. Ideal for cleaning electrical and mechanical equipment with complete safety to components.
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- Removes grease and oil without damage to surfaces or materials of construction.

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* ***See July 1952 issue of Industrial Hygiene and Occupational Medicines***

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SAFETY GUARD PARTS

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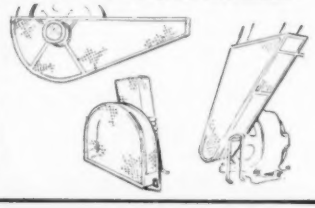

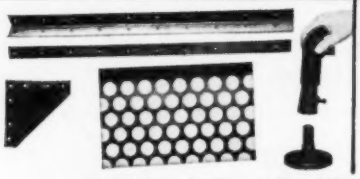

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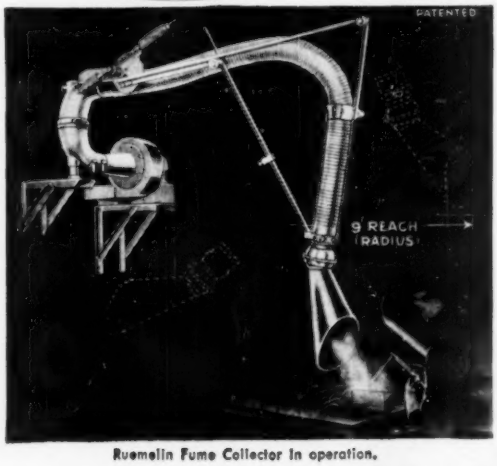

Ruemelin Fume Collector in operation.

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The Ruemelin Fume Collector hood can be instantly placed where needed anywhere in the booth welding area. No tedious adjustments necessary. Just pull the inlet hood to the welding position and you are ready to go.

Note the new spring-loaded counterbalance mechanism which makes Fume Collector much easier to handle. Ask for Bulletin 37-E illustrating this new feature.

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in the way of data to determine the effectiveness of carbon dioxide, vaporizing liquid, and other B agents on Class A fires; but there is a strong possibility that some or all of these agents may be effective or partially effective on specific types of A fires.

Among other portable protection for Class A fires is a pressurized "wet water" mobile trailer which is being developed in Texas. It has a capacity of 200 gallons at 125 psi, is equipped with 25 feet of 1-inch line and an adjustable nozzle, and is capable of providing a continuous 10-minute stream. A 20-gallon wet water wheeled extinguisher and earlier types of soda-acid and foam wheeled extinguishers in sizes of 17 or 33 gallons are still used in special areas such as docks. Units of this larger type are recommended for areas not readily accessible to municipal fire protection and with limited water supply. The advent of wetting agents for use with water is a significant trend and will be discussed in a later article.

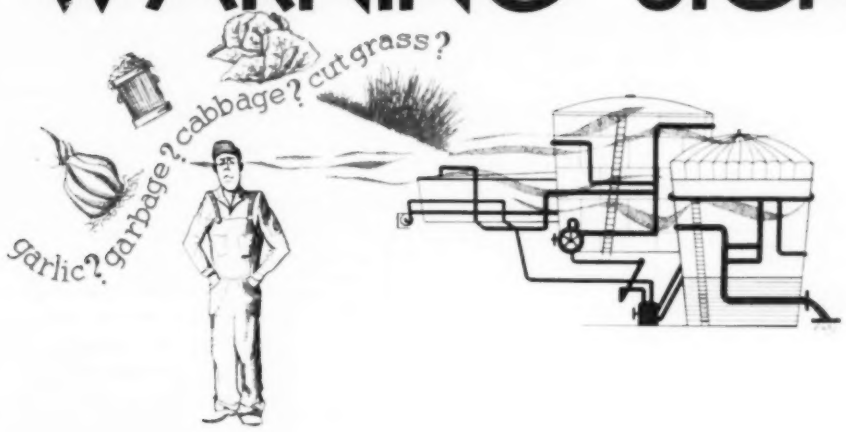
CLASS B FIRES

The nature of Class B fires requires active consideration and evaluation of the following basic factors: (a) Nature of the fuel involved—this factor determines the extinguishing agent that should be employed. (b) Quality of fuel involved—this factor indicates the volume of extinguishing agent required. (c) Physical arrangement of the fuel involved—this factor determines the method that should be employed in applying the extinguishing agent.

The characteristics of the flammable liquid involved determine the extinguishing agent or agents most effective in controlling and extinguishing the fire. The important characteristics which govern the conduct of a flammable liquid are: specific gravity, explosive range, ignition temperature, vapor density, flash point, viscosity and miscibility with water. The rate of vaporization is governed by the vapor pressure of the particular liquid and the surface

(Continued on page 108)

WARNING SIGNAL?



OR

BOOBY TRAP?

Is liquefied petroleum gas effectively odorized? Or is the odor not characteristic enough to warn when gas is escaping?

By JOSE B. CALVA, Ch.E., P.E.
J. B. Calva & Co., Minneapolis, Minn.

ONE hundred twenty-nine summaries of devastating L-P Gas fires and explosions are listed in the July, 1952 report of the National Fire Protection Association. These, says NFPA, "are the most serious cases and representative examples of run-of-the-mill incidents." In them 165 persons were killed and 594 injured.

The list includes incidents in which one burner or stove was involved with a consequent monetary loss of a few thousand dollars to the destruction of manufacturing buildings with losses in the 7 figures bracket. The report covers the last 20-year period which may well be designated the babyhood of the L-P Gas industry.

These figures become non-significant in the light of statistical analysis because the incidents are too few in relation to the total number of possibilities notwithstanding this, safety groups and insurance companies begin to be nervous about it. The former are apprehensive of the frequent loss of life associated with the "incidents"; the latter are alarmed by the frequency with which they face a total loss. Furthermore, according to the theory of probability, the law of averages will some day catch up with the incidents, in which case the L-P gas industry will face a catastrophic situation.

NFPA, in reprinting the above mentioned report in its booklet No. Q 46-2, takes the opportunity to stress the recommendations of its Bulletin No. 58 for the proper storage and handling of liquefied petroleum gases. Those recommendations should be strictly observed, but there is a weak link in their whole structure. They pre-suppose that the liquefied petroleum gasses are effectively odorized so as to indicate positively, by a distinctive odor, the presence of gas down to a concentration in air of not over one-fifth the lower limit of combustibility. But how effectively is this odorization being done? Can the gas be detected whenever it escapes from a L-P gas system? The answer is no.

This statement is no surprise to the industry, to safety organizations or to insurance companies. Almost every time that an "incident" occurs the question of proper gas odorization is raised and most records of litigated cases reek with contradictory testimony over the detection of the gas.

Different Odors

Even those witnesses who swear to have detected the odor of gas often add to the confusion by comparing the odor that they smelled with widely different substances. One noticed a grassy odor; another garlic-like; to the next one, it smelled like cabbage; while there are others who distinctly remember that the odor they noticed was that of rotten cabbage or of rotten eggs.

Evidently, most of the odors detected could not be taken by anyone as a warning of the presence of a dangerously explosive gas-air mixture. If any of the victims of the incident had only noticed a grassy, garlicky or cabbage-like odor, would he have become aware of danger and taken any safety measures? Is gas supposed to have those odors?

If a warning of danger is not well defined and characteristic, it may

become a sort of booby-trap which, by dulling our reaction to danger, lures us into it.

The popular L-P gas odorant, ethyl mercaptan, is actually capable of possessing the rainbow of odors described above. It can be either as pleasant as fresh grass or even more obnoxious than rotten eggs. Its odor, like that of many strongly odoriferous substances depends upon the degre of dilution in which it is detected by our olfactory sense. This characteristic in itself would not be a drawback to its use providing its dilution in the mixture at the critical concentration of one-fifth the lower limit of combustibility were constant.

The problem is that the amount of odorant in the gas is not, and cannot be, constant with the present method of odorizing L-P gas which consists of mixing ethyl mercaptan with liquefied propane. The amount of mercaptan used is about 1 pound for every 10,000 gallons of L-P gas. This amount, from a mole-fraction relationship basis, is in excess of the amount of ethyl mercaptan that is normally added to odorize natural gas and yet, as is commonly known, the odor of the gas issuing from cylinders or storage tanks of L-P gas may have either no odor at all or one unbearably obnoxious, depending whether the gas issues from a full or almost empty vessel.

What Happens to the Odorant?

Ethyl mercaptan is a highly polar compound and its solubility is very limited in non-polar substances such as the hydrocarbons. It is said that 1 pound of ethyl mercaptan is dissolved by 42,500 pounds of liquefied propane. This fact the writer has not been able to verify; instead, according to some of his preliminary determinations, it appears that the solubility is actually one-half of that given above, at 70° F. But let us assume that the solubility of ethyl mercaptan is of the order of 1 pound in 42,500 pounds of L-P gas at 70° F. It is well known that the solubility of a substance decreases with a drop in temperature and in the case of a saturated solution as is here implied, a drop in temperature will result in the partial separation of the ethyl mercaptan from its solution in L-P gas. This means that even though 1 pound of ethyl mercaptan may have been dissolved in 42,500 pounds of propane at 70° F. in, say Oklahoma or Texas, when this solution is delivered in a colder region its concentration will be substantially less. The tank car actually contains the same relative amounts of mercaptan and L-P gas that were mixed at the refinery but no longer do they form a solution. As a matter of fact, the ethyl mercaptan, following the inexorable laws of thermodynamics, has dropped out of solution and is lying at the bottom of the tank as a separate and distinct liquid phase. The probability that the whole system may again become homogeneous as the temperature rises is practically zero because of the extremely low solubility of the mercaptan in hydrocarbons.

Other Odorant Problems

The presence of other substances in the L-P gas-ethyl mercaptan system also contributes to the removal of the odorant. Water is a common impurity in propane as evidenced by its frequent freezing in the orifice of the pressure regulators in the northern parts of the country. One pound of ethyl mercaptan is soluble in 60 pounds of water and this solution is immiscible with and heavier than propane; therefore, any moisture in the L-P gas will drag to the bottom of the vessel all of the odorant that it can dissolve. This is why some producers resort to costly dehydrating operations of L-P gas.

To avoid frequent service calls to clean the frozen orifices, wise jobbers add methanol as an anti-freeze to cylinders and tanks in semi-bulk installations. Methanol is completely miscible with ethyl mercaptan and will also drag it to the bottom of the tank or other vessel. Even though a constant boiling mixture of methanol-propane-ethyl mercaptan or water-propane-ethyl mercaptan were to be formed it is highly improbable that they would have the vapor-pressure characteristics necessary to be carried over in a desirable quantity by the vapor of propane.

Even if these adverse factors were eliminated, the amount of odorant carried by the gas would not be constant because any volume of gas released from a L-P gas vessel is the result of the distillation of a binary mixture, L-P gas—odorant, the components of which boil 139° F. apart at atmospheric pressure. Thermodynamics shows that at any given temperature it is impossible to gasify more than a minute amount of the mixture in the desired proportions.

It seems obvious that the liquid-phase odorization of L-P gas is technically unsound. The solution of the problem rests on gaseous or vapor-phase odorization. If vapor-phase odorization were to be adopted all the weaknesses mentioned above would disappear because

(a) The gas would be odorized as it is released from the cylinder or tank.

(b) The gas-odorant relation would not be affected by the amount of L-P gas in the vessel.

(c) Any changes in temperature to which the L-P gas might be subjected during transportation would have no effect on the odor of the gas.

(d) The gas would have a characteristic odor.

(e) In the case of cylinder users, the warning given by escaping gas from minor leaks or a blown off pilot light would be exaggerated.

(f) The quality and intensity of the odor would be independent of whatever substance might be added to the L-P gas.

Unless we take advantage of the sound theoretical principles of gas odorization, the safety recommendations of the National Fire Protection Association will fail due to the weak link, odor; instead of being a warning, it will become a booby-trap.

From a paper read at a meeting of fire insurance engineers.

NOW...the first safety-perfect dry chemical fire extinguisher

the "REDI-FLO" *MARK II*®

featuring revolutionary "Spheral Valve" Design

When you squeeze the grip of the one-hand operated "Redi-Flo", Mark II, you get *action*—a powerful, instant flow of fire-killing dry chemical that streams out fast and freely—*without fail!*

With new, exclusive "Spheral Valve" Design, Stop-Fire rules out all possibility of extinguisher failure due to clogging or jamming of the valve. When fire occurs, you're *never* left holding an extinguisher that refuses to operate. Dry chemical particles can't possibly foul Stop-Fire's "Spheral Valve", nor can accidental distortion of the valve mechanism possibly interfere with valve operation. In fact, the "Redi-Flo", Mark II, may be partially discharged over and over—even with this "stop-go" action, it never hesitates or fails. *When you reach for the "Redi-Flo", Mark II, you KNOW it will go!*

***Safety-Perfect in Every Respect*—** Investigate the "Spheral Valve" (Patent Pending) and the *7 other features* for Safety-Perfect Performance offered by the "Redi-Flo", Mark II. Write Stop-Fire for all the facts today!

For *safety-perfect* dry chemical fire protection, insist on Stop-Fire's *safety-perfect* "Redi-Flo", Mark II!

Now available in 3, 5, 10 and 20 lb capacities (4 lb and 30 lb units available shortly)

Approved by Underwriters' Laboratories, Inc.

STOP to see STOP-FIRE — and the "REDI-FLO", Mark II
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"Pioneers of Modern Stored Pressure Fire Extinguisher Design"

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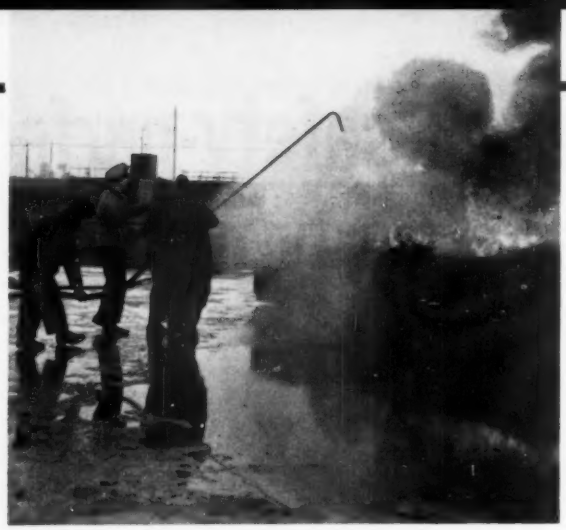

They Set Their School on Fire Everyday!

THE daily occurrence of huge fires and clouds of dense smoke in the vicinity of the Philadelphia Navy Yard no longer causes excited telephone calls reporting a major disaster. Now everyone knows it's the U. S. Navy's Fire Fighting School, training more than 6,000 men annually in fire extinguishing procedures. This school is one of 10 established by the Navy.

Requests by civilian groups to participate in the training attest to the thoroughness of the program. Last year over 600 civilians attended the school. They were sent from municipal fire departments, the United Nations and outstanding corporations. Seventeen hundred men of the Philadelphia Municipal Fire Department are graduates of the Navy school.

Lieutenant Commander L. O. Lindemann, the school's commanding officer, explains that the school offers 4 courses. The basic course lasts 5 days and involves class room instruction, fire extinguishing demonstrations by instructors, and actual fire fighting by the trainees under strict supervision. This course was designed primarily for fleet personnel.

A two-day course covers much of the same material presented by the fleet training program. It is used as a refresher for Navy personnel who have previously gone through the longer course, and for civilian groups unable to devote the time for the longer course. A special curriculum is available for Navy flight personnel. It embraces the scope of the standard programs, but emphasizes the special problems of aircraft or carrier fires.

A thirty day course trains personnel who will serve as future fire fighting instructors. The course covers every phase of shipboard fire fighting and many associated subjects necessary to the background of a fire fighting instructor. The course is intensive and covers a great number and variety of practical problems. The trainee receives detailed instruction in each phase, is under careful supervision at all times, and must qualify progressively to remain in the class.

A fifth course, designed to cope with the special problem of submarine fires, is now being organized. It is anticipated that when it is established, at least 20 submariners will pass through the school weekly.

Fire equipment manufacturers have contributed their services to the school, including training films and manuals.

Actual Fire-Fighting

The most interesting part of the training occurs out of the class room and in the demonstration lot. In addition to open tanks for initial demonstration purposes, the lot has full-sized models of ships' boiler and engine rooms, a paint locker, ladder assembly, a general compartment, and a 125 by 90 foot mockup of a carrier flight deck complete with a dummy plane.

Daily, these models are doused with oil and gasoline and set afire to duplicate serious shipboard fires. Trainees watch instructors attack the blazes with the types of extinguishing equipment best suited for each kind of fire. Then the fires are rekindled and the students, under supervision, duplicate the extinguishing procedures.

As part of its public service program the school, upon request, sends its personnel on lecture tours. At least 10 lectures a week on fire safety are delivered to schools and municipal or corporate groups in the greater Philadelphia area.

The school's instructors also ap-

ply their knowledge at times of marine disaster. A fire boat with standby operational crew is maintained at the Navy Yard. When a marine fire of any size occurs within one hundred miles of the Base, Commander Lindemann, a second officer, and 10 men board the ship and are en route to the scene in minutes. Over the years they have responded to numerous alarms and achieved an astounding record for "kills."

While the value of the school cannot be accurately determined, the Navy points out that during the early days of World War II more ships were lost to fire than by physical damage inflicted by the enemy. By 1943, however, the Navy's fire fighting schools were in full operation. During the later phase of the war, case after case can be cited where Navy crews trained in damage control and fire fighting saved the ship. The most conspicuous examples of almost miraculous salvage were the USS Saratoga, the USS Franklin, and the USS San Francisco. At the civilian level, thorough Navy training of municipal and corporate firemen must save millions of dollars of property from destruction by fire annually.

Lieutenant Commander Lindemann sums up the operation of the school this way: "We teach a man how to use all types of fire fighting equipment on all types of fires. We establish his confidence in the equipment by extinguishing blazes of terrifying size. Once a man knows he can outwit and extinguish these fires with adequate equipment, when a real emergency occurs, he will tackle the job promptly, effectively, and without fear."

Picture by courtesy of Walter Kidde & Co. Inc.

Flameproofed Clothing

(Continued from page 93)

as 80 percent reflectivity values. As a result of this, steel workers are able to enter furnaces which have been "cooled" to 700–800° F., and make welding and other repairs. Formerly, with the use of conventional coats, they were able to withstand such temperatures for periods not exceeding 15 seconds. The aluminum-foil coats permit them to remain inside a furnace up to 3 minutes at a time.

In discussing the safety factors of the treated cotton, a number of dramatic survivals have been reported. One was that of a 39-year-old molder foreman, who in attempting to flee from a bursting sand mold fell into a 6-foot pit which was filling with the escaping red-hot metal. Almost suffocated by the searing heat and with the metal lapping at his ankles, he managed to leap high enough to gain a hold on a railing and pull himself to safety. His clothing intact, he escaped with burns about the face, hands and feet but suffered no body burns. A companion was showered by hot sparks but escaped with lesser burns about face and feet. The record showed that the garments of both men were still "wearable" after their escape. There had been no known previous record of survival in such an accident.

Picture by courtesy of Treesdale Laboratories & Textile Processing Co.

Insulation Board To Be Flame-Resistant Coated

SOME insulation board will spread fire several times faster than wood. It has been a major factor in many high loss of life fires in dwellings, nursing homes and hospitals. However, insulation board can be made less dangerous—treated to slow the spread of fire—and the country's insulation board manufacturers have just agreed to treat all board from now on with a flame resistant coating.

This industry-wide safety move has been revealed by Percy Bugbee, General Manager of the National Fire Protection Association of Boston, in a speech before the New England Association of Fire Chiefs. The industry's action was voluntary, Mr. Bugbee told the chiefs. "Insulation boards are an important and widely used building material and the treatment of these boards with flame resistant coatings should substantially reduce the life hazard," he said.

WHAT KINSEY DOESN'T KNOW ABOUT WOMEN

The learned Indiana professor knows a great deal about women . . . but he probably doesn't know what you men in industry know — That women will not be "regimented" when it comes to industrial work garments.

For America's Women-On-The-Job the 140 members of the Institute of Industrial Launderers offer *individuality* in women's industrial fashions.

These industrial fashions, available on a rental basis, are smartly-tailored, good-looking and *good-fitting* garments.

You can rent a whole wardrobe of these industrial fashions from your nearest certified, accredited industrial launderer. The cost is modest. Write today for the name of your nearest supplier.

INSTITUTE of INDUSTRIAL *Launderers*

1627 K St., N.W.
Washington 6, D.C.

(Use Key # K-65 on Inquiry Card on page 117)

HILD MAINTENANCE EQUIPMENT

for scrubbing and maintaining floors of all kinds and for scores of other dust-control and clean-up jobs.

HILD System MAINTENANCE EQUIPMENT & SUPPLIES

Hild Floor Machines

Available in the two types pictured at left . . . with plain handle or with tank on handle to carry 3 gallons of soap and water. Easily interchangeable attachments to scrub, wax, polish, buff, sand, grind or steel-wool floors of all kinds. All models have the HILD Safety Switch and larger models have handles adjustable to operator's height. Six husky models with brush spreads from 11 to 19 inches.

HILD Equipment keeps factory floors clean, smooth and slip-safe . . . prevents accidents, speeds up plant traffic and improves employee morale. Special attachments for removing rough, bumpy, hard-caked grease and for cleaning oily, slippery floors.

HILD Wet-and-Dry Vacuums

Always ready for any clean-up job, wet or dry. No filter to change or other "preliminaries." Moisture in vacuum air-stream cannot damage specially designed HILD Bi-Pass motor. Two sizes . . . 15 and 55 gallon tanks with capacity for 10 or 40 gallons of recovered liquid.

When used to take up dirty suds and water from scrubbed floors, the Hild Vacuum gets floors dry almost instantly . . . prevents the slip hazard of wet floors. Attachments to "sweep floors with air" . . . drain coolant sump tanks . . . clean walls, shelves, bins, pipes, etc.

Only HILD has the patented Shower-feed Brush

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HILD Model "K" Floor Machine
Big performance . . . low cost . . . only $145

Lowest cost ever for a genuine HILD Floor Machine. Equipped with ⅓ H.P. motor. Brush spread 12½ inches. Brush speed 210 rpm. Attachments to scrub, wax, polish, buff, steel-wool floors in offices or homes.

(For further details, use Key # K-66 on free Inquiry Card on page 117)

Warehouse Survey Shows Fire Dangers Increase

ON AN average of once every week somewhere in the United States a large loss warehouse fire occurs, resulting in individual losses ranging from $100,000 to over $5,000,000.

In commenting on it, Lewis A. Vincent, National Board of Fire Underwriters' general manager, says that the fire losses are of such proportions—and the potential so great—as to demand national attention. As an example of this potential, he cited general inventory accumulations which currently stand at a record high of $73.5 billion.

"When these commodities are destroyed by fire," Mr. Vincent explains, "they are forever lost to the economy. In addition, the large volume destruction of certain vital raw materials and finished products could dangerously affect the national security, particularly when time itself becomes a critical material."

An NBFU survey found that regardless of the continued expansion of public warehouse facilities, space is still at a premium. This deficiency in space, the survey suggests, has led to violations of the principles of safe storage. In one eastern city, the survey notes, a series of warehouse fires brought about a careful check of 295 buildings containing this class of occupancy. It revealed that 95 percent had one or more serious fire hazards or protection deficiencies.

The survey contains numerous recommendations, including those for building construction, storage practices, maintenance and housekeeping, fire protection and salvage operations.

Construction Fire Hazards Need Special Protection

LET'S not kid ourselves—fires during building construction are preventable and controllable, but it takes some preplanning.

That warning has been issued by John J. Ahern, director of fire protection and safety engineering at Illinois Institute of Technology and president of the Greater Chicago Safety council, at a meeting of the Greater Chicago Safety Conference.

"In construction, you must start with the premise that you are extremely vulnerable and build your defenses accordingly," Mr. Ahern says. The 3 most vulnerable times in the life of a building are construction, alteration, and wrecking. During these periods defense against fire is down and exposure is up.

"Two most vital control measures are assurance of proper fire protection and the reduction of combustible material. Fire hydrants and water lines should be provided at the time the foundations are laid. Standpipes should be available, floor by floor, as construction proceeds. These precautions are vital to fire department personnel in case of fire."

(Cont'd on next page)

As a further safety measure, Mr. Ahern calls for a daily clean-up of scrap lumber, paper, cement sacks and other debris. This material should be removed from the building before burning, he said. More fires are started and lives lost due to temporary construction conditions during the life of a building than at any other time.

"Fires can be prevented," concluded Mr. Ahern, "Plenty of water and the reduction of combustible material are the key points."

A Safety Set-Up

A FULLY integrated program of industrial safety and plant protection has been rounded out with completion of staff training and final installation of equipment at The Chemstrand Corporation of Decatur, Alabama.

F. William Koster, Acrilan plant manager, explained recently that the ideal in industrial safety is to maintain operations in entirely safe surroundings to safeguard lives and property. Design of facilities and training of personnel are aimed at achieving that ideal, he said.

Latest piece of equipment to be placed in service is a triple-combination 500 gallon-per-minute pump truck equipped to fight chemical, electrical and other types of fires.

Augmenting the fire truck is portable fire and safety equipment located throughout the company's facilities, and a program of employee training for efficient, prompt action when confronted with any possible industrial fire and accident condition. Approximately 50 employees in the administrative offices, research center and the plant manufacturing areas have been trained and are on call in event of emergency.

The 1-½ ton truck, which is standard industrial equipment, is equipped to pump water at the rate of 500 gallons per minute from either the company mains or from the river. The project is equipped with a 100,000 gallon pressure tank, and steam and electrically operated 1,500 gallon-per-minute river pumps. The truck mounts a special 300 gallon "wetter - water" (treated water for certain types of fires) tank and a battery of three 100-pound carbon dioxide cylinders for use in extinguishing chemical or electrical fires. A selection of nozzles enables firefighters to use either high pressure streams, fog or foam sprays.

Within Chemstrand—which comprises 14 buildings—are 53 strategically located firehose hydrants. The manufacturing and research areas are outfitted with automatic sprinklers. Integrated with this are 86 fire-call stations which register alarms by code at the Plant Protection headquarters. Localized fires normally can be extinguished with readily accessible portable equipment or by the sprinklers.

Coordinating the alarm system is an automatic signal network maintaining a vigilance on ceiling sprinklers and other equipment. The mo-

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ment water is caused to flow through sprinklers either as a result of heat from a localized fire or by failure of the water system, the signal system reports this action, enabling investigators to rush immediately to the affected area.

Behind the equipment stand the men whose actions and training are vital in emergencies. Under Mr. Koster is a safety committee of department heads, and an organization of personnel in each area trained for emergency duty. An efficiently trained fire brigade comprising employees in each operating area mans the equipment.

The group through committee formations also are on the constant alert for fire and accident hazards, and corrective measures are taken promptly upon recommendations of the committee.

Electrical Disconnector Check to Truck Fires

A NEW type of battery disconnect switch and battery cable, developed by the automotive section of the Atlantic Refining Company, has proved so effective that it has been made standard equipment on all of the company's 500 tank trucks.

Attached to the battery ground lead, the new device may be disconnected quickly by turning the switch one-quarter turn counter clockwise and pulling it apart. It is located on the frame rail of the tank truck directly behind the cab.

One of the chief purposes of the installation is to provide a means of immediately eliminating current from all vehicle wiring in case of an electrical fire or other emergency. It is also used as a positive disconnection when the vehicle is being repaired, or when the truck is to be parked unattended for an extended period of time. The company reports that since the disconnect switch has been installed on the trucks, it has not caused any difficulty with the electrical circuits.

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Class A & B Fires

(Continued from page 100)

exposed to the atmosphere. Low flash point liquids have higher vapor pressures than those having higher flash points.

An increase in temperature will increase the vapor pressure of a flammable liquid resulting in an increased rate of vaporization. Due to their density, the vapors of several common flammable liquids tend to concentrate at the lowest level. Hazardous concentrations may remain for a period of time within confined spaces. Forced ventilation may be required to effect dilution and diffusion of a hazardous concentration in a basement or similar space. The presence of a hazardous concentration of flammable vapor can be determined by the use of an explosimeter, combustible gas indicator, or flame safety lamp.

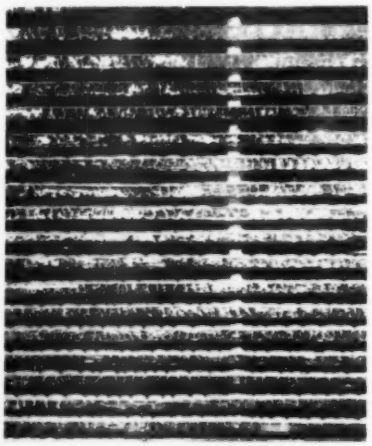

Photo shows accumulation of dry chemical which retards spread of fire on test sample.

Flammable liquids having a flash point above 100 degrees F. can be extinguished readily by the use of water fog, provided the water can be applied to the entire liquid surface at a sufficiently rapid rate. Flammable liquids having lower flash points are more difficult to extinguish with water fog. The rate of burning can be controlled by the proper application of water fog, but conditions must be very favorable to obtain complete extinguishment. Furthermore, reignition can occur unless exposed steel and other solids

are cooled below the ignition temperature of the particular flammable liquid. Flammable liquids, which have a sufficient degree of viscosity, can be extinguished readily by the use of water fog.

Crude, lubricating, and heavier grades of fuel oils have a sufficient degree of viscosity to cause froth to form on the surface of the oil when water particles are applied. This froth is formed by water particles being converted into steam in the upper stratum of heated oil. This froth, however, disintegrates very rapidly and reignition can occur if exposed metals or other solids retain enough heat to be hotter than the ignition temperature of the particular liquid.

Extinguishment of Class B Fires

As in Class A fires, first aid appliances can play an important part in extinguishment of incipient fires. Various extinguishing units can be used for this purpose.

A foam extinguisher reacts to form bubbles filled with carbon dioxide. This mixture can be discharged against the side of containers or on walls to form a heavy blanket which suffocates the fire. The foam resists breakdown by heat and flames.

Mechanical (air) foam is very effective in extinguishing flammable liquid fires. However, ordinary mechanical and chemical foams are ineffective on fires involving alcohol, acetone, carbon disulphide, or ether. When ordinary foams are applied to the surface of these liquids, a chemical reaction occurs which causes the bubbles to disintegrate. There are special foams which are effective on fires involving these liquids. These foams are available in extinguishers of the 2½-gallon size as well as in the types used for foam systems.

Water treated with the proper percentage of a standard wetting agent and applied in the form of fog is also effective in controlling and extinguishing flammable liquid fires.

Carbon dioxide extinguishers and extinguishing systems have been among the most widely used means of combating Class B fires for approximately 30 years. In first aid appliances, carbon dioxide extinguishers are made in sizes ranging from 2 pounds to 100 pounds. The 50-, 75-, and 100-pound sizes are equipped with a carriage to make them readily portable. Since it is an inert gas, the principal action of carbon dioxide is smothering and, therefore, good extinguisher design requires that the carbon dioxide can be carried to the area where the flames can be rapidly suffocated. This area is close to the fuel and, therefore, extinguishers of the carbon dioxide type carry instructions recommending discharge of the gas at the base of the flames rather than at the flames.

Carbon dioxide extinguishers have many advantageous characteristics such as cleanliness of discharge, ability to disperse in an enclosed space, nonconductivity and even a limited cooling effect. Perhaps the greatest disadvantage of a carbon dioxide extinguisher is the lack of range of effectiveness of a discharge

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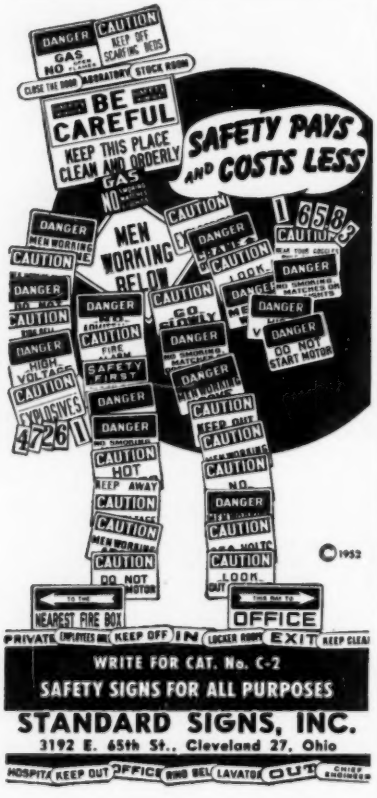
stream. Extinguishment with carbon dioxide extinguishers depends upon a close approach.

Carbon dioxide systems have been used for quick, effective extinguishment of fires in enclosed spaces and open areas with definite boundaries. Extinguishment in closed rooms and spaces by carbon dioxide depends upon the reduction of the oxygen content from its normal 21 percent to a lesser figure, generally 15 percent for most flammable liquids and other hazards. In the case of special hazards such as carbon disulphide, an even greater decrease in the oxygen percentage is required. Tests by Underwriters' Laboratories, Inc. and other organizations have shown that carbon dioxide systems can be used effectively for protection of fur storage vaults, rotating electrical equipment, marine apparatus, airplane engines, and many other hazards.

Carbon dioxide systems are made in both high and low pressure types. In the former, carbon dioxide gas is stored in ICC containers, subject to normal temperature fluctuations. In the latter case, the carbon dioxide is stored in a refrigerated ASME tank, maintained at a temperature of approximately 0 degrees F. and exerting a pressure of approximately 300 psi. Many of the larger system installations involving one or more tons of carbon dioxide gas utilize the low pressure system. In many cases, one tank serves to protect a variety of hazards. All systems can be manually operated and, in addition, many systems are designed for automatic actuation.

Dry chemical hand and wheeled extinguishers are rapidly gaining the distinction of being one of the most effective agents for use on flammable liquid type fires. The effective extinguishing action of dry chemical has not, as yet, been entirely explained. Theories have been advanced in regard to the formation of carbon dioxide due to the breakdown of sodium bicarbonate which is the principal ingredient of a dry chemical, the cooling action occurring when heat is taken away from the fire due to the endothermic reaction of the dry chemical during the breakdown process, and the smothering action of the physical particles. It has long been believed that a catalytic action occurs which tends to reduce the oxidation process and contributes to extinguishment. At any rate, when dry chemical is applied to a fire, there appears to be an almost magical elimination of flame.

Tests on wheeled extinguishers have indicated that deep layer gasoline fires in steel pans of areas up to 200 square feet have been successfully extinguished with some 150-pound dry chemical units. The 350-pound dry chemical extinguisher handles this fire and is capable of extinguishing fires in areas up to 250 square feet under most conditions. Fire in gasoline over large areas radiates considerable heat.



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However, the dry chemical cloud formation forms a shield for the operator permitting him to approach the fire to its base.

Considerable experimental work has been completed with dry chemical systems. The systems are being designed to effect extinguishment either on the principle of inerting an enclosed atmosphere or on the basis of application to a local area. The systems are being designed for manual or manual and automatic actuation. A number of installations of dry chemical systems have been made and these installations are being carefully watched to accumulate field experience and valuable data. Widespread use has been restricted up to the present time by the difficulty encountered in establishing correct flow data and quantity per volume or quantity per area requirements for effective extinguishment.

The principal type of vaporizing liquid used at the present time consists of a liquid made from 90 percent carbon tetrachloride, a freezing depressant, and a stabilizer for the freezing depressant. Its function is to reduce oxidation and smother the fire when discharged into the burning material. On a weight basis, its cooling effect is approximately that of carbon dioxide when vaporized.

Vaporizing liquid extinguishers are made in pump and stored pressure types in sizes up to 3½ gallons. Although effective on small flammable liquid type fires, their use on larger fires has been restricted by a variety of factors. Principal among these is the toxic quality of the vapors and the combustion products when the liquid is discharged onto a fire.

When the liquid from a vaporizing liquid extinguisher becomes a vapor in the fire area and mixes with the contaminated air, it gives off an acrid odor which serves as a physical warning to avoid prolonged exposure to the fire gases. In fact, when used in unventilated spaces, the action on the nostrils and eyes drives a person from the room.

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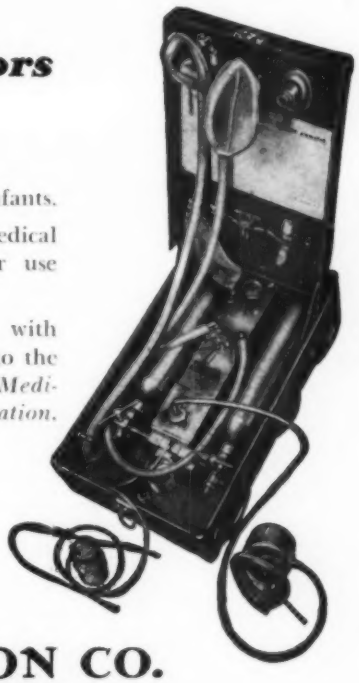

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In recent years, other vaporizing liquids have been developed, the primary one being chlorobromomethane. Tests with this agent indicate superior extinguishing performance over the normal carbon tetrachloride base liquid. The extent of the extinguishing performance of chlorobromomethane may be 2 to 3 times greater than the CC14 base liquid. Although chlorobromomethane may be slightly less toxic than carbon tetrachloride, the normal precautions regarding use in unventilated spaces must still be taken.

Among the newer agents which have found very little commercial interest as yet are the fluorine compounds. Preliminary tests by the Corp of Engineers and others have indicated a decided advantage of these fluorine compounds from the standpoint of toxicity, corrosion and fire extinguishment. However, it is generally regarded that the prices of these agents at the present time still prohibit general use. On the other hand, should the advantages of these agents be emphasized in the future and the actual price of the agents drop through volume production, vaporizing liquids may play a more prominent part in the extinguishing picture.

With increased fire losses as a spur, and the interest in development of new agents and new methods of discharging and dispersing old agents, it can be anticipated that the future will hold bright promise for greater extinguishing potential for all fires, as well as Class A and B types.

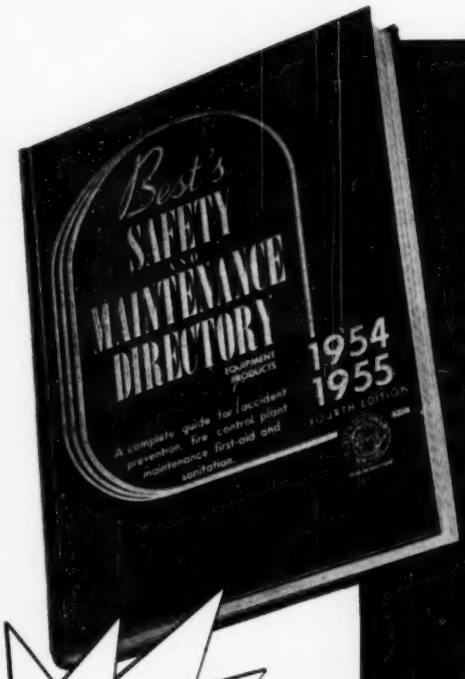
REFERENCES

NFPA Handbook of Fire Protection, Crosby-Fisk-Forster, National Fire Protection Association.
NBFU Research Report No. 8, National Board of Fire Underwriters.
Fire Fighting Tactics, Lloyd Layman National Fire Protection Association.
Factory Mutual Bulletin of Loss Prevention No. 12-75.

Pictures by courtesy of National Board of Fire Underwriters.

For detailed descriptions of Class A and B fire extinguishers and systems see pages 24–70 of "Best's Safety and Maintenance Directory," 1952–53 edition.

THE OTHER HALF...



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NEW DRY CHEMICAL UNITS

(Use Key # 838 on Inquiry Card on page 117)

NEW nozzle and gas tube design and stepped-up rate of flow have increased the fire fighting effectiveness of Ansul wheeled extinguishers by 50 per cent, Ansul Chemical Co., reports.

The 150–B and 350–B replace the company's A-models. Using dry chemical as extinguishing agent, Ansul wheeled fire extinguishers are now protecting hazardous areas in the steel, chemical, petroleum, aviation, railroad, automotive and other industries.

Incorporated in the special nozzle design is a new sealing principle (floating plug seated against a rubber pad) to assure water and gas-tightness. Patents are pending on several features of the new nozzle.

Dry chemical flow rate has been increased 30 per cent by redesigning the gas tube in the dry chemical chamber, permitting efficient use of larger nozzle orifices. Range of the dry chemical stream is 40 feet.

Operation and maintenance have been simplified by the addition of a check valve in the gas tube and a pressure gage in the nitrogen cylinder valve. Due to increased regulator capacity, operating pressure on the 350–B extinguisher can be reached in 12 seconds instead of 25 seconds.

Overall dimensions for the 150–B are 55¾ inches high and 30 inches wide. Weight is 525 lbs. The 350–B is 60 inches high and 35 inches wide. It weighs 1080 lbs. Rubber tires are optional on the 150–B.

LENS CLEANING & NON-FOGGING CLOTH

(Use Key # 839 on Inquiry Card on page 117)

A CHEMICALLY treated cloth, SEECLOTH, for simultaneously cleaning and mistproofing goggles, glasses, masks, windows, mirrors, windshields of auto trucks, planes and locomotives, has been developed by HYGIENE RESEARCH Inc.

Merely wiping the glass or transparent plastic with the SEECLOTH is sufficient

not only to clean but also to mistproof it for a period of a few hours to two weeks, depending on atmospheric conditions. The cloth can be used over and over and remains effective for several months' use.

In industry it is a convenient and economical method for workers to use, *on the job.* Also workers can mistproof their goggles while in inaccessible and confined places, such as inside tanks or boilers, etc., or when working over open steaming vats.

It is packaged in 8" x 9" pieces for goggles and larger pieces for windshield use. Special sizes cut to order. It is also sold by the yard. For literature and a sample strip, use the Key # on the Inquiry Card.

AIR FILTER

(Use Key # 840 on Inquiry Card on page 117)

AN AIR filter, designed to remove 99 percent of all particles .3 micron size and larger, is the product of the Cambridge Corporation. Called the Cambridge Absolute Filter, the device can be applied to optical, film, laboratory, food processing, pharmaceutical, chemical, precision machine, printing, textile, brewing and other special processes where a high degree of freedom from dust is essential.

The filtering units range in size from 24"x24" to 8"x8" and in depth from 3" to 11½". Light, and available with rubber gaskets, the filter can be installed with only a simple casing and access, and requires no power, flushing water or drains. The filter itself is composed of high-efficiency paper made from specially-treated paper pulp into which fine asbestos fibers have been introduced in the manufacturing process. Soft and felt-like in appearance the filter has low resistance to air-flow—a pressure drop of one inch of water at rated air flow. There are no moving parts and no maintenance is required. Lasting one to three years with proper pre-filtering, the filter can be removed and burned when exhausted. The filter is particularly valuable against radioactive and toxic hazards, having been used on a large scale by the Atomic Energy Commission.

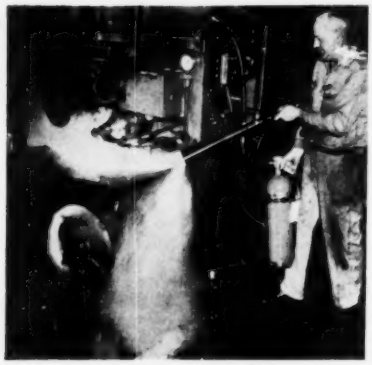
'THANTIS' LOZENGES

(Use Key # 841 on Inquiry Card on page 117)

REPORTS from industrial sources indicate that the increasing use of 'Thantis' Lozenges for "first aid for throat irritations" have resulted in substantially reducing *lost man hours* of work.

Some 5,000 industries, large and small ranging from heavy industry to department stores and radio stations, have been making use of this medical specialty. They have found that 'Thantis' Lozenges have been favorably accepted by their working personnel and that their use has resulted in materially reducing time lost as a result of colds and other upper respiratory infections.

Hynson, Westcott & Dunning, Inc., will be glad to make available a substantial number of trade packages for trial upon request. Write—'Thantis' Lozenges, P. O. Box No. 424, Baltimore 3, Maryland.



CARBON DIOXIDE EXTINGUISHERS

(Use Key # 842 on Inquiry Card on page 117)

A NEW line of portable carbon dioxide fire extinguishers is announced by the Fyre-Freez Division of Walter Kidde & Company Inc. Known as Fyre-Freez, the new portables feature squeeze-type valves and come in five sizes—2½, 5, 10, 15, and 20 pound models. They use lightweight cylinders and the squeeze-type valve requires only normal hand pressure to actuate the extinguisher after the safety pin has been removed. Recharge is easy too. Simply squeeze the valve open to permit the recharge gas to enter the cylinder. Carbon dioxide is approved for use on Class B (flammable liquid) and Class C (electrical equipment) fires. It performs its fire killing job by reducing oxygen in the fire area to a degree insufficient to support combustion. The fire is virtually smothered in seconds. Clean and non-corrosive, the inert gas is absorbed into the atmosphere following discharge leaving no mess to be cleaned up. The extinguisher is approved by U.L. and F.M.

EXPLOSION-PROOF DRUM INSPECTION LIGHT

(Use Key # 843 on Inquiry Card on page 117)

THIS light was developed by Stewart R. Browne Mfg. Co., Inc. for use by oil refineries and chemical plants where a great need for safe barrel and drum inspection lamps exists. The Model XP-25-H tubular 25-watt explosion proof light is approved by Underwriters' Laboratories for Class 1, Group D Hazardous Locations. It is suitable for inspecting 55-gallon or 5-gallon drums or any containers used for volatile liquids. The light is 45" long and has largest outside diameter of $1\frac{11}{16}$".

The globe and guard assembly is furnished as a unit, both with the complete light and as a replacement part. The tubular bulb is of the rough service type developed for this special service and it has a shock mounting of silicon material to minimize the side-wise movement of the lamp and to help reduce lamp breakage. The explosion proof light is made to withstand a drop of not more than three feet and to operate in ambient temperatures not over 104 degrees F.

MERCURY VAPOR METER

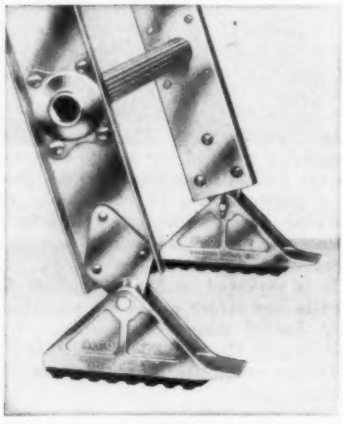
(Use Key # 844 on Inquiry Card on page 117)

THE new Kruger Mercury Vapor Meter offers light weight, high sensitivity and simplified operation. It is a portable line-operated photoelectric instrument for surveying room atmosphere, made by Harold Kruger Instruments. The standard model weighs only 7 pounds and has a range of 0.005 to 0.1 milligrams per cubic meter. The preliminary operation consists of setting the zero and sensitivity knobs to obtain the required meter readings for each. The instrument is then held in

the atmosphere to be tested and the mercury concentration is read directly on the meter.

For situations requiring less sensitivity there is a low cost model with a range of 0.05 to 10 mg. per cu. m. Another model features an adjustable alarm which may be set at any desired concentration to warn nearby personnel that a danger exists. It also has the advantage of covering both concentration ranges mentioned above.

A means of measuring and controlling mercury vapor should be available wherever mercury is heated or mercury spillage occurs. Mercury is used in industrial instruments, laboratories, electrochemical plants, ore refining, fluorescent lights, rectifiers and amalgams.



ALUMINUM LADDER SHOES

(Use Key # 845 on Inquiry Card on page 117)

THE Aluminum Ladder Company has announced the new Alco-Lite all-aluminum safety shoe for straight and extension ladders. The Alco-Lite safety shoe is of cast aluminum and can be used with either the rubber tread or spike on the floor surface. Because it will not throw sparks, it is particularly suitable for use around fuels and other volatile fluids. The safety shoes can be attached to almost any metal or wooden ladder.

NEW WELDERS' & CHIPPERS' GOGGLES

(Use Key # 846 on Inquiry Card on page 117)

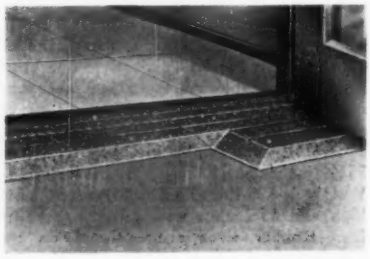
A NEW line of cup-type goggles has been introduced under the trade name "SAF-I" which includes a new chippers' goggle and 2 new types of welders' goggles. Features of the new goggles, as claimed by the manufacturer, are good ventilation, light weight and comfort without sacrificing strength and durability. The chippers' goggle comes equipped with new plastic lenses which have super scratch resistance and super strength with only half the weight of safety glass. This new plastic lens is known as Optilite A. Two other lens materials, Optilite B plastic and hardened glass are also available.

Eye cups for all 3 goggles are scientifically designed for comfortable fit and maximum angle vision. The rubber headband has a rippled surface and an adjustable slide fastener to give positive fit and prevent slipping. The new goggles are products of the United States Safety Service Co.

NON-SLIP THRESHOLDS

(Use Key # 847 on Inquiry Card on page 117)

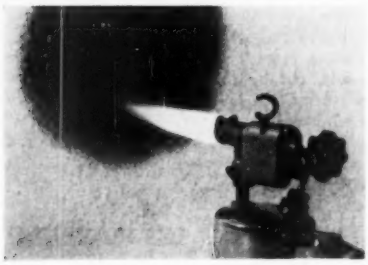
SPECIAL thresholds that permit easy installation with various types of floor hinges are now available in the complete line of abrasive cast thresholds made by Wooster Products, Inc. Shown is type described as Wooster 115-SA. Additional safety and wear are features of the aluminum oxide grits integrally cast into the surface. The thresholds are supplied in aluminum and iron, also bronze and nickel when permitted.



FIRE RETARDANT COATINGS

(Use Key # 848 on Inquiry Card on page 117)

TWO new fire retardant coatings for wood and metal surfaces—ALBI 99 and ALBI PC—have recently been subjected to severe tests at Underwriters' Laboratories to measure their ability to prevent the spread of flame, as well as their durability under various conditions. The test results indicate that ALBI 99 and ALBI PC provide the washable, moisture-resistant finish of ordinary paints along with the maximum fire retardant



qualities formerly available in ALBI water-base coatings.

These coatings applied by brush or spray gun, produce a hard, durable finish in any of several colors. When exposed to flame, they form a cellular insulating "mat" that resists both heat and flame. The mat can be scraped off easily, revealing the undamaged surface ready for refinishing.

The coatings will not hasten the corrosion of metal, and will withstand washing, changes in temperature, and humidity conditions normally encountered by such materials. No apparent effects to the coating were noted after prolonged exposure to water or temperature at 212 to 220 F.

Other tests, not included in the recent Underwriters' reports, demonstrated the ability of ALBI 99 to bond securely to metal (steel, aluminum, etc.), and to insulate against the transmission of intense heat, which ordinarily causes failure of metal structures during fire.

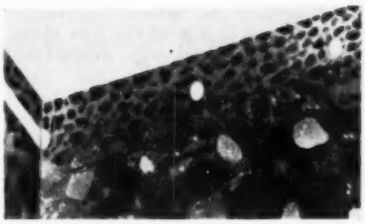
NON-SKID HANDLE COATING

(Use Key # 849 on Inquiry Card on page 117)

CUSTANITE Corporation, manufacturers of the widely used line of Flex-Flo* safety hammers and safety Handrifts, announce the availability of their recently-developed "SLIPRUF"* coating of all sizes of hammers and handrifts. Developed from a special formula, at the request of safety engineers, the coating provides a tough friction surface which is extremely durable, grease-proof, and sweat-proof.

Providing strong traction between the hand of the user and the handle of the tool, the non-skid coating not only diminishes the chances of dangerous accidents, but contributes remarkably to fatigue-reduction since much less muscular effort is required for a secure-grip on the tool.

* Trademark.



HEAT-RESISTANT FLOORING

(Use Key # 850 on Inquiry Card on page 117)

A HEAT-RESISTANT flooring that withstands thermal shock and does not deteriorate under extremely high temperatures has been developed by Flash-Stone Company, Inc. Designed to be used where temperatures range up to 2000 degrees F., this new industrial flooring disperses heat rapidly through aluminum rods embedded about 1 inch below the surface. Because of their high thermal conductivity, these rods carry the heat from the contact area and spread it over a wide section of the floor.

Its high resistance to heat as well as all wearing forces makes this industrial flooring ideally suited for metal rolling mills, foundries, glass factories or in any location where extreme heat can cause damage to floors. It utilizes the basic Dynapakt Concrete, hardest specially-selected and graded rock and sand combined with cements in a low-water ratio. The long life of Dynapakt is due to proved installation methods which include compacting with heavy power-driven equipment. Floor is ready for use 24 hours after installation.

HOT MATERIALS MITT

(Use Key # 851 on Inquiry Card on page 117)

A NEW, improved mitt for safely handling extremely hot materials is announced by the Singer Glove Manufacturing Co. This new item is called the KOOL-MITT and is made of three layers of materials:—(1) asbestos protects leather from shrinking and gives fireproof protection; (2) leather gives the mitten

long life and maximum protection against sharp and abrasive surfaces; and (3) wool provides maximum insulation. The mitt is stitched with steel staples for long life. The manufacturer claims that in actual tests in foundries the KOOL-MITT outlasts up to four pairs of reinforced asbestos mitts and in some instances has replaced asbestos gloves. Back of mitt is open for ventilation, and it is so designed that it can be flipped off hand and held on wrist by a special wrist strap. Full protection is given to the side and back of fore-finger area.

NEW RESPIRATOR

(Use Key # 852 on Inquiry Card on page 117)

ECONOMY and comfort are said to be outstanding features of a new, inexpensive single-cartridge "Gasfoe" respirator announced by Mine Safety Appliances Company. All 7 parts are independently replaceable, so that long service life is assured, the announcement explains. The cartridge, which contains treated charcoal

fill, is designed to protect the wearer against nuisance concentrations or organic vapors, and certain acid gasses having obnoxious but relatively harmless odors. The lightweight, compact facepiece, of formable aluminum, is easily shaped by hand to fit the face contour. This feature, together with a soft sponge-rubber facepiece cushion, assures an excellent face seal without uncomfortable pressure. Because of its compact and streamlined design the new Gasfoe respirator is said to eliminate "blind spots" for the wearer, and prevent the closed-in feeling which workers frequently complain of in wearing respirators. An auxiliary overlay screen keeps paint globules out of the replaceable cartridge. A package of these auxiliary screens is provided with the respirator.

GASOLINE-TANK CLEANER

(Use Key # 853 on Inquiry Card on page 117)

GASOLINE and fuel tanks may now be safely welded, due to the development of a self-emulsifying, self-scouring solvent, GUNK, being marketed by The Curran Corporation. The new solvent has a powerful affinity for, and combines with, gasoline or volatile fuels to render them completely self-emulsifying so that upon the association with water a safe, oil-in-water emulsion is instantly formed that may be completely removed by sluicing with a water hose. The technique for scouring a gasoline tank of liquid fuel and fumes is outlined by the company as follows:

Add as much GUNK as there are traces of liquid gasoline remaining in the tank; then, fill tank slowly with water, which displaces all of the gas fumes, and the milky aqueous oil-in-water emulsion formed may then be drained from the tank and the tank freely rinsed with a water hose. After the completion of this process, welding can be carried out safely, without fear of fire or explosion. After welding, if you wish to remove moisture from the same tank, it can be dehydrated by treating it with low-cost alcohol.

ANTI-SLIP FLOOR WAX

(Use Key # 854 on Inquiry Card on page 117)

THE industrial division of the R. M. Hollingshead Corporation, has just announced the development of a new anti-slip "Triple Service Floor Wax."

The new wax, according to the manufacturer, is designed to give optimum performance in all respects for low-cost

floor care. Listed as highly anti-slip material by Underwriter's Laboratories, Inc., it is neither tacky nor gummy, has unusual self-leveling qualities and dries in less than 20 minutes.

The new floor wax is easy to remove, and is water resistant within one hour after application. It withstands repeated damp-moppings, may be spot cleaned and spot-waxed without showing overlap marks and does not show discoloration even in test applications on clear glass.

The wax may also be frozen and exposed to prolonged heat without any harmful effects.

MAGNIFYING LENSES FOR BIFOCAL-WEARING WELDERS

(Use Key # 855 on Inquiry Card on page 117)

IMPROVED vision for welders who wear bifocal glasses is provided by a new device, Ortho-Weld magnifying lenses, announced by the Bausch & Lomb Optical Co. The lenses, precision-molded of lucite, are made to fit all standard welding helmets. By inserting them between the regular helmet filter lens and the rear cover plate of the lens holder, the bifocal-wearing welder is given comfortable close-up vision at any angle. Magnification provided by the lenses is

needed because the bifocal segment of regular glasses is out of the line of vision while the helmet is in working position.

The helmet unit consists of two lenses molded in a single piece, surrounded by a supporting frame. Each lens is centered for comfortable vision, allowing full use of the helmet window.

Although designed primarily for bifocal wearers, the Ortho-Weld lens can be a valuable optical aid to all welders as a magnifier on precision jobs.

EAR-VALVE DEMONSTRATOR

(Use Key # 856 on Inquiry Card on page 117)

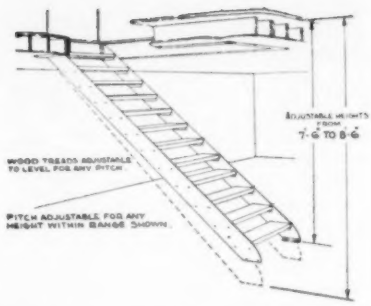
A NOVEL flip booklet illustrating how noise is controlled by the Lee Sonic Ear-Valv is, upon request, now available to industrial firms at no charge from Sigma Engineering Co. Using the principle of the familiar comic flip booklet, wherein one rapidly flips the pages to animate the figures, this booklet makes understandable the complex mechanical operation of the Ear-Valv. It shows how an inner valve is activated by sound pressure to control and eliminate the harm from harmful noise before it is permitted to enter the ear canal.

This booklet was devised to make clear how the Ear-Valv leaves the ear canal open to air and normal atmospheric conditions, permits hearing of desired sounds without removing from ears, and takes the harmful sound energy out of loud noises. It helps make clear why the product provides increased production, reduced noise fatigue and resultant illnesses, less accidents and better employee morale.

ADJUSTABLE STAIR

(Use Key # 857 on Inquiry Card on page 117)

THE Adjustable Stair and Manufacturing Co. announces a new permanent adjustable stair unit for use in new construction, commercial and industrial applications. Designed as a complete unit to reduce labor and construction time, the Adjust-O-Stair elminates hazards normally present in the use of temporary ladders in new construction. It provides flexibility in meeting variable heights or pitch-and-run requirements in commercial or industrial installations. The device is made with steel stringers and wooden treads. Stringers are 12 feet long, and are equipped with all necessary hardware for assembling with treads. These are easily and quickly assembled into a permanent stairway which can be installed imme-


ADJUSTABLE HEIGHTS FROM 7'-6" TO 8'-6"
WOOD TREADS ADJUSTABLE TO LEVEL FOR ANY PITCH
PITCH ADJUSTABLE FOR ANY HEIGHT WITHIN RANGE SHOWN

diately, as soon as stairwell is framed and before concrete floor is poured. Stringers adjust to heights of 7'6" to 8'6", and pitch-and-run from 7'9" to 8'9". Wooden stair treads, cut by the dealer to any desired length up to 4 feet, increase the flexibility of the unit to meet various structural conditions. Treads are easily levelled and secured by tightening two bolts against each stringer side.

WHEELED CO_2 EXTINGUISHER

(Use Key # 858 on Inquiry Card on page 117)

A COMPLETELY new 50-lb. carbon dioxide wheeled engine for extinguishing flammable liquid and electrical industrial fires is announced by the American-LaFrance-Foamite Corp.

The new series 4, Model 50-S is light in weight and strong in construction with good balance in wheeling position. A short cylinder lowers the center of gravity and increases maneuverability for one-man operation. Weight without cylinder is only about 45 pounds as compared with 107 for earlier models. Cylinder valve is seat-type, hand wheel operated. Valve

may be opened before or after approach to the fire. A squeeze-type lever valve on the discharge horn operates and closes with simple hand pressure, an important feature when changing positions to fight the fire. The horn is equipped with an anti-static device to minimize static electricity and for safety in fighting electrical fires. The extinguisher is inspected and approved by Underwriters' Laboratories, with a B-1, C-1, classification.

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

PERSONAL PROTECTION

Inhalator 559
Scott Aviation Corp. Illustrated and described in this 6-page brochure are 4 types of the company's demand inhalator. Different units are cylinder, wall outlet and portable types. In addition a dual unit, which handles 2 patients simultaneously is discussed. The features emphasized in the brochure are simplicity, portability and oxygen economy.

Gas Mask 560
Acme Protection Equipment Co. A special gas mask for welders is the subject of this 2-page bulletin. Both dust and fume canister and compressed air supply may be used with the mask, which has large, wide vision lenses to permit the welder to see adequately while protected. The lenses are supplied in different welding shades and are hinged for easy opening.

Cover Goggle 561
Willson Products, Inc. This 2-color, 2-page bulletin describes a goggle for use over prescription glasses. The frame is pliable vinyl, and the lens is either acetate or vinyl. Other features include light weight, strength, roominess, adequate ventilation, differing nose sizes, chemical resistance and replaceable lenses in green or clear styles.

Safety Shoes 562
Hy-Test Division, International Shoe Co. This multi-color folder lists and pictures many different styles of safety shoes with built-in steel toes. Styles include moccasins, loafers, plain and grained oxfords, ventilated shoes, boots, half-boots, work shoes, moulders shoes, women's shoes, and pull-ons. Soles are furnished in leather, crepe and types resistant to various hazards.

Work Clothes 563
Worklon, Inc. Subject of this 16-page, 2-color bulletin is a line of work clothing made from acid and chemical resistant fibers. The clothing is said to outlast regular work clothing many times and to be grease, dirt, sunlight, mildew, moth and ultra-violet ray resistant. Charts show resistance to various chemicals. Laundering and other instructions are included in the bulletin.

Slicker Boots 564
Hood Rubber Co. Slicker boots, featuring convenience and comfort, are illustrated and described in this 4-page, 2-color folder. Light in weight, the boot can be rolled into a compact package. It slips on easily over shoes, the folder states, and is of knee length for wear in areas where high protection is necessary.

Protective Equipment 565
Scientific Industrial Supply Co. Different kinds of work gloves, safety leggings, finger guards, aprons, gauntlets and safety hats are fully discussed in this 16-page catalog. Illustrations and specifications accompany rubber, rubber-coated, plastic-coated, steel-reinforced, leather, welders, asbestos, and various kinds of cotton and heavy fabric gloves.

Safety Equipment 566
Davis Emergency Equipment Co., Inc. This 54-page, illustrated catalog describes an entire line of safety and first aid equipment. Some of the categories are unit first-aid kits, burn and snake-bite kits, various medical components of the kits, stretchers, salt dispensers and auto first aid kits. Respiratory protection, including gas masks, inhalators, resuscitators, blowers and air supply equipment, is also covered. Protective clothing and air testing units are discussed.

Work Clothing Service 567
Institute of Industrial Launderers. Described in this 12-page booklet is a service for users of industrial clothing. Fire-retardant, acid-proofed and regular work clothes may be rented from this national service. Uniforms, fenders, and wipe rags may also be rented. Cleaning and sterilization is also offered on various industrial clothing.

Anti-Fog Liquid 568
Industrial Products Co. An anti-fog liquid, said to clean and treat in one application, is the subject of this 1-page bulletin. Features of the liquid emphasized are time one application lasts, ease of use, non-burning and non-toxic qualities. The liquid comes in a squeeze-spray plastic bottle.

Plastic Gloves 569
David's Gloves, Inc. Positive protection against most acids, alkalies, oils, chemicals and boiling water is said to be offered by the various gloves illustrated and detailed in this 8-page, 2-color folder. Different weight, length and styles of gloves, with varying surfaces are shown, in either full-dipped or palm-dipped plastic types.

Welding Helmets 570
Jackson Products, Inc. Two types of welding helmets, lift and stationary front, are discussed, illustrated and diagrammed in this 2-page, 2-color bulletin. Both are equipped with plastic-glass fiber, one-piece helmet and improved headgear. Emphasis is placed on ease and comfort as well as safety.

FLOORING MAINTENANCE

Vacuum Machines 571
Hild Floor Machine Co. Two models of the company's line of heavy-duty, portable, wet or dry vacuum cleaners are detailed and described with illustrations and diagrams in this 4-page, 2-color booklet. Attachments, construction details and specifications, and ability to clean both wet and dry jobs are features of the machines.

Floor Care 572
Consolidated Chemical Laboratories, Inc. Discussed and pictured in this 8-page, 2-color booklet is a program for proper floor maintenance. The correct cleaning, preserving and maintenance of linoleum, wood, rubber, asphalt, terrazzo and marble floors, as well as concrete and magnesite is carefully worked out. Helpful hints on particular problems are added.

Sanitation & Maintenance Products .. 573
Theo. B. Robertson Products Co., Inc. Floor cleaning compounds, scouring and wall cleaners, hand soaps, surgical soaps, deodorizers, insecticides, rug and upholstery shampoos, polishes, floor maintenance and other sanitation and maintenance products of the company's line are described in this 8-page brochure.

Floor Finish 574
S. C. Johnson & Son, Inc. A 4-page, 3-color bulletin, this literature explains in words and pictures the qualities of a heavy-duty floor finish. Easy maintenance, water resistance, safe footing and non-scuffing quality are given as principal features. Uses are illustrated.

FIRE PROTECTION

Movable Steel Partition 575
Virginia Metal Products Corp. A one-hour fire partition, approved by UL, is the subject of this 2-page, 2-color bulletin. The tests and results are included in the bulletin. Construction details and diagrams round out the picture. An additional benefit is the ease with which the partition may be moved into place or removed.

Fire-Fighting Equipment 576
Atlas Safety Equipment Co., Inc. A crash axe, a fire-hatchet, safety and fire belts and a life net are all covered in this 2-page, 2-color bulletin. Full details and specifications are given for most of the equipment. Emphasized is the crash axe, insulated for cutting live wires.

Sprinkler Plug 577
Sprinkler Stopper Sales Co. A sprinkler plug designed to stop unnecessary water damage, is the subject of this 4-page, 2-color brochure. The plug can be slipped on a pole and inserted in the ring of a sprinkler head to stop the water flow. Illustrations and diagrams show the use of the plug.

Squeeze-grip Extinguishers 578
C-O-Two Fire Equipment Co. This 2-color, 4-page bulletin describes the advantages of a new extinguisher valve which operates by squeezing between palm and fingers. The entire line of wheeled and hand portable extinguishers is shown and specifications for each model given. Listed advantages of grip are time-saving, economy of gas, and positive safety seal.

Vacuum Hand-Pump 579
Tokheim Oil Tank and Pump Co. This 4-page, 2-color literature discusses the specifications, use and safety aspects of a vacuum pump for the transfer of liquids. Three models are illustrated. All are said to reduce fire hazard, keep

(Continued on the next page)

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Free Bulletins (Cont'd)

liquids off floors, and speed up transfer in liquid handling. Fluid is also kept clean.

MISCELLANEOUS

Poison Plant Guide 580
Medical Supply Co. A guide to recognizing poisonous plants, this 4-page, 2-color magazine reprint takes up the 3 most common and dangerous poisonous plants: poison ivy, poison oak and poison sumac. Featuring an illustrated fast on plant identification, the reprint discusses the appearance, habitat, precautions against, and symptoms of poisoning by all these plants.

Wire Creeper 581
Martindale Electric Co. An answer to the problem of stringing wire quickly and safely over ravines, through trees, and across congested areas is presented by this 1-page bulletin. The wire creeper can be pulled over one wire by a plastic coated cord, then a new wire can be attached to the cord.

Traffic Lane Markers 582
Campro Sales Co. Specifications and installation procedure of traffic lane markers for plant aisles, parking areas, hospitals, etc., are given in this 4-page, illustrated brochure. Attention is called to strength of material, solid fast color, long life, resistance to chemicals and inexpensiveness.

Safety Signs 583
Standard Signs, Inc. This 36-page catalog covers a line of metal safety, warning, instruction and information signs. Included is a section devoted to paper tags for marking dangerous machines, hot wires, open lines, etc. The visibility and length of life of the signs is discussed, and sample signs are illustrated.

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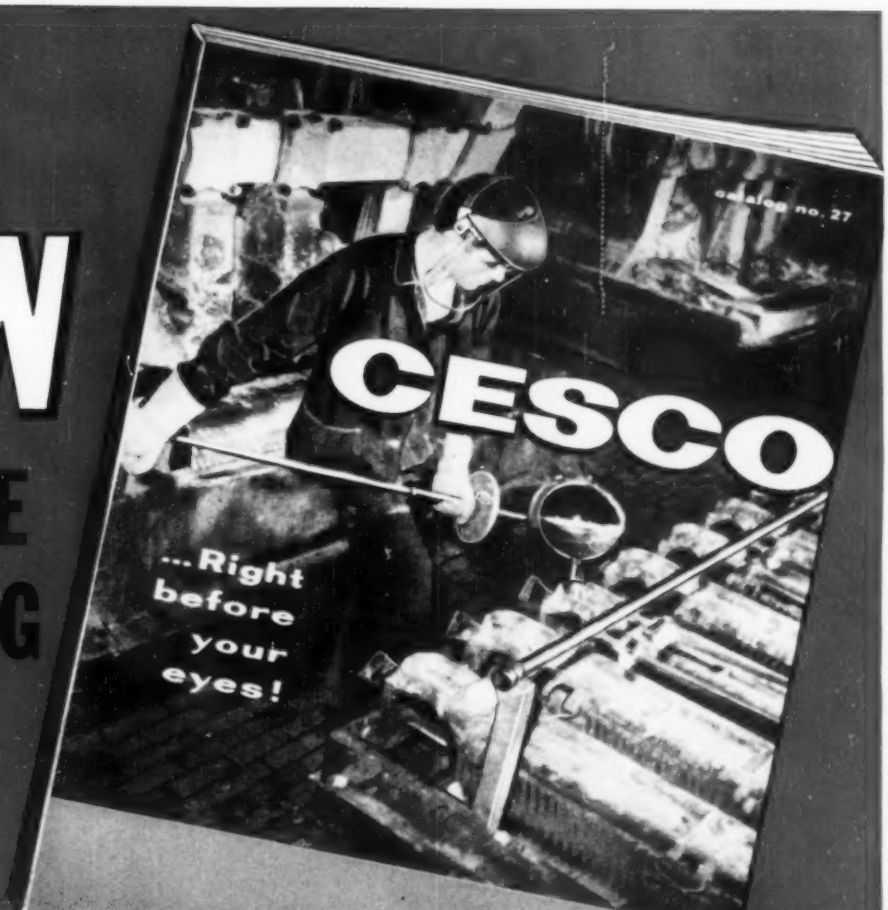

CESCO safety equipment

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- Wide Vision
- Wire Screen

GUARDS
- Grinder

HELMETS
- Air-Fed
- Fiber Glass
- "Hat-n-Shield"
- Welders

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- Acid
- Air-Fed
- Babbitting
- Dust
- Lead Discing
- Paint Spray
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- Anti-Glare
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- Clear Cover
- Perma-Clear
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- Air-Fed
- Dust
- Fume

SHIELDS
- Face
- Hand
- "Hat-n-Shield"
- Observation
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